JULY, 1951

Industrial FINISHING

Published monthly in the interest of Product Finishing and Painting by Practical Publications, Inc., 1142 N. Meridian Street, Indianapolis 4, Ind.

PROTECT YOUR
INDEPENDENCE WITH
"DEFENSE" BONDS

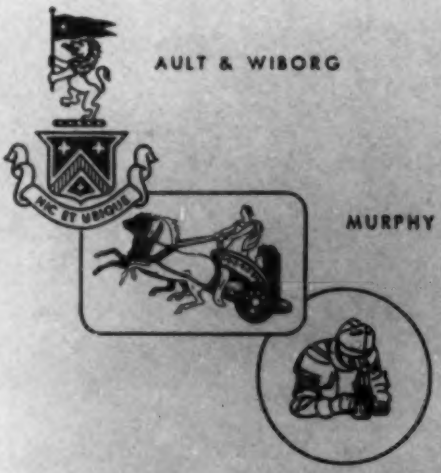
FINISH-WISE, let the Lilly "Key" protect you against unnecessary finishing troubles and worries. This is the "Key to the Right Finish", so that—"With the Right Finish—You'll Finish Right".

THE Lilly FINISHES
VARNISH COMPANY
Indianapolis, Indiana • Gardner, Mass.
THE LILLY COMPANY • High Point, N. C

Interchemical Finishes

UNDERCOATS, VARNISHES, LACQUERS,
ENAMELS for METAL, PLASTIC, WOOD

To give your product a good start, give it an Interchemical Finish!



MAIN OFFICE: 350 FIFTH AVENUE, NEW YORK, N. Y.
FACTORIES: ELIZABETH, CINCINNATI, CHICAGO, LOS ANGELES

Ault and Wiborg, Murphy, Roxalin and IC are trademarks of Interchemical Corporation.

They Gambled and Won with

BURDETT OVENS

featuring

"Radiant Heat"

Who — better than a user of Burdett Ovens — could you ask for an authentic and factual performance report? Certainly you would more readily believe him, as critical as he would naturally be, than all the claims we would make — at any rate, you would probably discount 50% of our story.

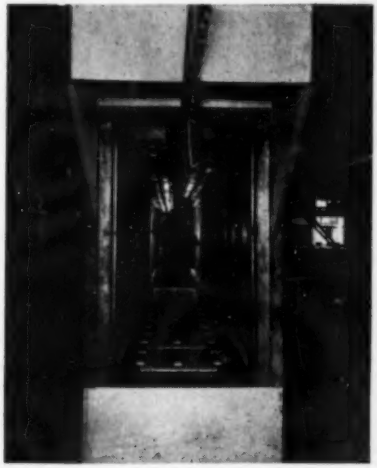
Well, then as long as we all agree that the user's story is pretty much the McCoy, see if your equipment can boast of these results:

One manufacturer reports that products formerly requiring 60 minutes to bake now get through his Burdett Oven in 20 minutes; another manufacturer is now operating a burn-off and drying operation at approximately one-half of his previous cost with his new Burdett Oven; and still another satisfied user has reduced core drying time from 12 hours to 12 minutes (imagine that)—and with superior results. These are but a few examples of how the Burdett principle of "Radiant Heat" has revolutionized industrial heat processing.

Burdett "Radiant Heat" Gas Burners can easily be installed in present equipment with revolutionary results and savings — ask about it.

TEST RUN YOUR PRODUCT

We would appreciate the opportunity to make test runs on your product at our plant—without obligation. When you see your product run—see the savings and results, you'll agree that Burdett Ovens are the solution to your heat processing problem. Regardless of your operation, you owe it to yourself and your customers to investigate Burdett Ovens featuring "Radiant Heat." Submit your specifications for up-to-date recommendations.



DRYING TIME CUT FROM 30 MINUTES TO 3 or 4 AT 400°-450° F. in this porcelain enameling concern with Burdett "Radiant Heat" Ovens. Gas consumption is 40¢ per hour.

B U R D E T T

MANUFACTURING COMPANY

OVENS AND "RADIANT HEAT" GAS BURNERS

CHOICE OF FINISHES HELP SELL PHILCRAFT TABLES

This mahogany corner table from the 700 series by Philcraft Inc., is as modern as tomorrow, and available to customers in a choice of Blond Mahogany, Cordovan Mahogany or Black Lacquer.

These finishes, created especially for Philcraft in our studios, are every bit as modern as the fine furniture they protect and beautify. Our specialists see to it that every finish fulfills the needs of the manufacturer, in appearance, quality, and production economy.

The Better the Finish, the Better the Buy

GRAND RAPIDS VARNISH CORPORATION

GRAND RAPIDS, MICHIGAN

Makers of the Famous Guardsman Finish and Guardsman Cleaning Polish

Published
the 18th of each month by
PRACTICAL PUBLICATIONS
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1142 N. Meridian St.
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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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JULY, 1951
Vol. XXVII, No. 9

ABCA

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

★

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27 TWENTY-SEVENTH YEAR OF PUBLICATION

Acceptance under Section 34.64, P. L. & R., authorized

Mixed Furniture was in evidence at the Summer Furniture Market in Chicago, both in meetings and in a series of exhibition rooms. It is pointed out that new home furnishings have always been sold to the public as a permanent investment; that many families prefer to supplement their present furnishings rather than discard them, and completely refurnish.

Contributing materially to this trend is the almost universal popularity of medium colored finishes in both traditional and modern pieces. Supplanting the extreme bleached finishes in ultra modern furniture with a finish that has just a bit more color, and lightening the color in traditional pieces makes it possible for Mrs. Housewife to use tables, chest and chairs of unrelated descent in the same room, with no sense of disharmony.

* * *

New Lighting Device known as "Panelite" is announced by Sylvania Electric Products, Inc. It consists of a thin flat sheet of glass covered with a "phosphor-dielectric" coating and a layer of vaporized aluminum. Wires are connected to the edges of the sheet to pick up electric current. The product can be made in almost any size to provide luminous ceilings, walls, stair risers, clock dials, switch plates or house numbers. Regular 110-volt, 60-cycle current is sufficient to illuminate a night clock dial. For low-level illumination in restaurants and public buildings, a transformer may be placed in the line to step up the voltage to 400 or 500-volts.

* * *

Fight Waste. With the Fight Waste plan, developed and promoted by Henry Disston & Sons, Inc., of Philadelphia, now operating in hundreds of plants throughout the nation, Disston has just announced an extension of the campaign—a drive to get steel scrap into the channels of distribution. The steel scrap situation is growing more serious weekly.

Since Disston is both a producer and a consumer of steel, the company is aware of all aspects of the scrap problem. Every Disston advertisement carries the theme—"Scrap Turned In Is Steel Turned Out." Letters to Disston's industrial distributors emphasize the emergency; a direct mail campaign to all users and manufacturers of steel is in full swing.

* * *

Concrete Hardener. A new concrete hardener called Flintcrust Liquid converts a "naked" concrete floor into a surface capable of long and maintenance-free service under oil, grease and penetrating, discoloring, and disintegrating conditions, as well as heavy abrasive truck traffic. Flintcrust transforms "bare" concrete, which ordinarily "drinks" oil, grease and other disintegrating liquids, into

(Continued on page 7)

Introducing

A BRAND NEW, AND TOTALLY DIFFERENT PRODUCT

No. 2100

"HOT-R-COLD"

LACQUER

OVER 35% SOLIDS—May be sprayed **HOT or COLD, without thinning** or **adjusting** of **any kind.**

HEAVY BODIED *(over 35%)*
PERFECT FLOW
LIGHT COLOR
QUICK DRY
EASY RUBBING
HIGH COLD CHECK RESISTANCE

Now you can determine for yourself, whether you prefer to spray your Lacquer HOT or COLD.

OUTSTANDING VALUE

Also a "COMPANION" Sealer

Sold with an absolute GUARANTEE OF SATISFACTION

V. J. DOLAN & COMPANY, INC.

"Unquestionable Quality"
INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.
BErkshire 7-0100

NOW - *Get All These Advantages of a* NON-FOAMING WATER WASH

PELRON'S CLEARWASHES WILL NOT FOAM!

CLEARWASH 370 used in water curtain spray booths will float over 90 percent of the oversprayed paint, as well as eliminate foam in the spray booth. Oversprayed paint is conditioned not to clog the circulating system nor to adhere to the booth walls. Economical in that its first cost is low, a little goes a long way, and much expense is saved in cleaning reservoirs, pipelines, booth walls, etc. Details in Technical Bulletin 129.

ARE YOU ACQUAINTED WITH PELRON'S AIDS AND SERVICES TO THE FINISHING DEPARTMENT?

- **EMULSION CLEANERS**
  New principal—partly emulsified soil floats away. Fast, economical, safe.
- **STRIPPERS**
  Cold stripping of lacquers, japan, baked enamels. Fast, safe, economical.
- **PHOSCOTE**
  Cleans and phosphates in one operation. Economical to use on steel or aluminum. Increases paint-adherence.
- **TECHNICAL BULLETINS**
  Complete details of application methods for all cleaning and surface preparation materials.

TELL US YOUR PROBLEMS . . . WE WILL RECOMMEND THE CORRECT PELRON PRODUCTS TO SOLVE THEM

PELRON CORPORATION

7740 W. 47TH STREET, LYONS, ILLINOIS

CHICAGO DETROIT CLEVELAND BUFFALO SOUTH BEND
MILWAUKEE INDIANAPOLIS ROCK ISLAND

a case-hardened surface impervious to these destructive chemicals. The liquid is easily applied by flushing, without interrupting normal plant operation. This treatment counteracts and prevents "sanding" and eventual "surface breakdown".

* * *

Lamp Of Endurance. Bruce Todd, president of the Fluorescent Lighting Association, reports that the official rating of the cold cathode fluorescent lamp is 25,000 hours. According to Mr. Todd, this is several times the rated lives of other light sources.

In terms of actual use, the new lamps will burn continuously for about three years, or if used for eight hours a day, five days a week, they will not have to be replaced for 12 years.

* * *

Humidity Control. A division of Minneapolis-Honeywell Regulator Co. has developed instruments and equipment which automatically record and control relative humidity for industrial air conditioning setups. Whether the problem is air conditioning for production efficiency, fire safety or personal comfort, here is a combination of sensing element and instrument that will allow close tolerances in humidity requirements, operating flexibility and closely integrated control of air-conditioning systems.

* * *

New Chain Drive that eliminates vibration, jerking, slapping and chattering is announced. This power transmission drive makes use of an entirely new combination of mechanical principles, provides a saving in steel and considerable saving in floor space in factories.

The Hy-Vo drive, as it is called, uses a new chain and sprocket en-

SPECIALIZATION
Saves You Money
on
THINNERS

We make nothing but Thinners—blended Solvents, and nothing else. Naturally, we buy large quantities of solvents—at lowest prices. *Specialization* saves us money on overhead too—and these savings we pass on to you, our customers.

We know how to formulate Thinners to your requirements—been doing it for 26 years. We've satisfied big and little customers . . . let us show you how a Lacquer Thinner *SPECIALIST* can supply you with the *right* Thinner . . . and still save you money.

Just fill out form below and mail today. We'll work out a Thinner *especially for you*, and send a sample. Think we can do it for 85¢ or less a gallon too!

POTTER PAINT CO., INC.
CORTLAND, N. Y.
THINNER SPECIALISTS

The product we make is:_____
We use Lacquer Thinner for:
☐ Spray ☐ Dip ☐ Cleaning ☐ Other_____
We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____
We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____
Address_____
City_____ Zone____ State_____

SAVE

Time and Labor on Refinishing

When the finish has to be removed, take it off the fast, easy way—with NO-WASH Remover. NO-WASH means what it says—*no after-wash* of any kind is required! This powerful solvent reduces the toughest paint, enamel or varnish to a soft sludge, easily peeled off. Hard scraping and sanding are avoided. The newly stripped surface emerges clean, smooth and free from any waxy film —ready for refinishing. NO-WASH offers you a proven method for cutting time and labor costs.

We have over 35 years' experience solving all kinds of removing problems. Consult us on any questions you may have.

NO-WASH REMOVER

WILSON-IMPERIAL CO.
125 Chestnut Street
Newark 5, N. J.

Send coupon for complete information.

WILSON-IMPERIAL COMPANY
125 Chestnut St., Newark 5, N. J.

We are interested in stripping finishes from

Type of Finish

Name

Company

Street

City State

Gagement principle that practically eliminates chordal or polygon action common to the ordinary chain drive. The sprockets resemble involute gears having curved teeth which engage the chain links with a rocking joint action.

* * *

P. V. & L. Sales. The first four months of 1951 show an increase of 33⅓% in the total sales of paint, varnish and lacquer, as compared to the first four months of 1950. This figure is based on reports from 680 establishments which represent about 87% of total production of the industry in U.S.A. Trade sales showed a gain of 31%; industrial sales 39½%; unclassified 28½%.

A drop in sales occurred in April 1951, as compared to March 1951. Trade sales dropped 6½%; industrial sales more than 7%. Total sales for only one month amount to more than $100,000,000.

* * *

Rice Blast Cleaning. Grains of rice forced at high speed under air pressure into the combustion chambers of an automobile engine have been found to be effective in removing objectionable deposits without tearing down the engine.

The "Head-On Carbon Blaster," developed by the Kent-Moore Organization, Detroit, Mich., uses a regular air compressor producing air pressure from 40 to 60-lbs. for the operation. The specially devised machine is loaded with 10-lbs. of rice which is automatically metered out to blast 5½-oz. into each combustion chamber.

* * *

Bomb Glass. Development of a special window to minimize the effects of explosive forces is announced by Pittsburgh Plate Glass Co. It is a glass-plastic laminate to be known as Flexseal Bomb Glass; is said to minimize the dangers of flying glass in explosion areas.

Speed Up Production

Secure Greater Uniformity

Save Time, Labor, Fuel

with more than 2,000 manufacturers now using

ROSS INDUSTRIAL AIR SYSTEMS

DRYING . . . . . BAKING
CURING . . . . . COOLING
HEAT TREATING . . . AGING
CONDITIONING

Get the benefit of our 30 years of experience in industrial finishing. Literature describing ROSS equipment for any particular processing operation will be sent promptly on request.

ROSS RS SYSTEMS

J. O. ROSS ENGINEERING CORPORATION

MANUFACTURERS OF AIR PROCESSING SYSTEMS

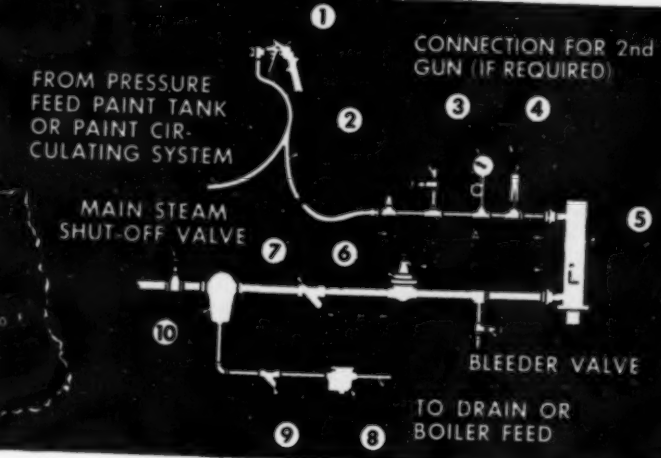
444 MADISON AVENUE NEW YORK 22, N. Y.

201 N. Wells Street, CHICAGO-6 • 79 Milk Street, BOSTON-9 • 9225 Grand River Avenue, DETROIT-4 • 600 St. Paul Avenue, LOS ANGELES-17
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

Spraying

The Brake Shoe Steam-Spray gun.

Typical steam spray system layout.



Typical elements required for the system.

NO	QUAN	PART
10	1	STEAM SEPARATOR—1½
9	2	STRAINER—½
8	2	STEAM TRAP—½
7	1	STRAINER—1
6	1	PRESSURE REGULATOR—1
5	1	STEAM SUPERHEATER
4	1	MERCURY THERMOMETER 0-500 F
3	1	PRESSURE GAUGE 0-150 PSI
2	1	SPECIAL STEAM HOSE
1	1	STEAM SPRAY GUN

Kellogg Division, 94 Humboldt St., Rochester 9, N. Y.

Brake Shoe

Finishes with STEAM

CUTS TIME AND COSTS

The revolutionary new spray-painting process developed by du Pont uses superheated steam in place of air to apply finishing materials of higher viscosity in thicker films with one pass of the gun. These coats are surprisingly free from sags, popping and runs.

Operator productivity is increased, cutting time and labor costs. Steam spraying uses less material, solvents and thinners than conventional spray methods.

The steam spraying system may be installed in a production-line operation at moderate cost.

The Brake Shoe Steam-Spray gun makes the process practical for production-line use.

1. Exclusive insulation, heat radiating design, and built-in finger guard assure trigger and handle temperatures which are comfortable to the bare hand.
2. One-piece, easy-to-clean air cap and fluid nozzle are designed to provide uniform distribution of material. Full range of spray width control allows adjustment to any degree desired.
3. Hose support reduces downward torque on head and contributes to the fine balance of the gun.

Brake Shoe will demonstrate this new process in your own plant, or arrange visits to nearby installations. Brake Shoe can supply you with all the equipment necessary for steam spraying.

KELLOGG DIVISION BRAKE SHOE COMPANY, CANADIAN PLANT, NIAGARA FALLS, ONT.

American Brake Shoe Company, Kellogg Division
94 Humboldt Street, Rochester 9, N. Y.

Gentlemen:

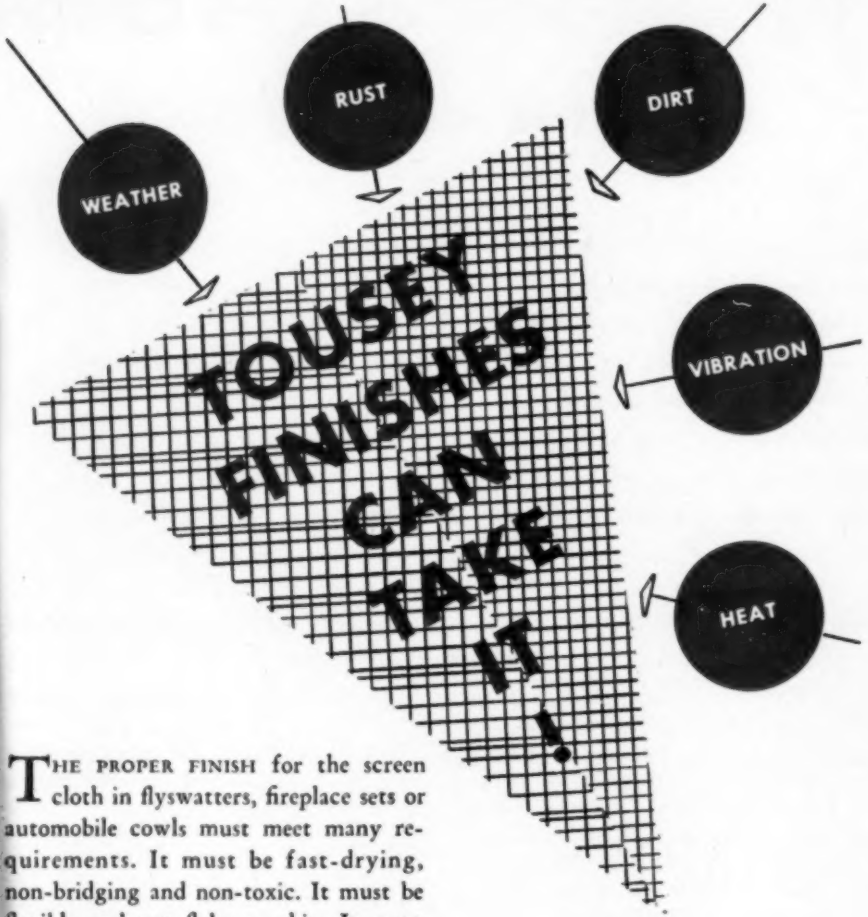
Please send me information on steam spraying.

NAME ..... TITLE .....

FIRM .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....



THE PROPER FINISH for the screen cloth in flyswatters, fireplace sets or automobile cowls must meet many requirements. It must be fast-drying, non-bridging and non-toxic. It must be flexible and not flake or chip. It must be economical to use and tough enough to hold up under severe punishment. Such a finish is made by TOUSEY. Its constant use by a leading manufacturer of screen cloth gives proof that . . . ***Tousey Finishes Can Take It!***

TOUSEY PRODUCTS
DURACOTE for DURABILITY

TOUSEY VARNISH COMPANY
520 W. 25th St., Chicago 16, Illinois

Spray Your Products
ELECTRONICALLY

USE UP TO

70% LESS PAINT

WITH THE *New* ASHDEE ELECTRONIC

PAINT MISER

Turns Paint Losses into Profits

Why spray away thousands of dollars in paint waste annually, when it's so easy to save almost every bit with the sensational new Paint-Miser. Used in conjunction with your present finishing equipment, Paint-Miser precipitates up to 95% of the paint on the work . . . practically abolishes off-spray. Adapts readily to any finishing department . . . extensive changes not required. Put Paint-Miser to work for you now . . . it will effect tremendous savings in both paint and man-hours, and greatly reduce operating costs. Paint-Miser is sold outright. No royalties to pay. It's in a class by itself.

Write, wire for complete details at once!

Get For Greater Production...Cut operating costs

Get Better, More Uniform Coverage

Use Less Manpower... Use Less Air

Reduces Off-Spray to a Minimum

No Build-Up or "Fatty" Edges

Saves Thousands of Dollars Yearly

No royalties to pay... you can buy it outright

ASHDEE PRODUCTS, INC.

18029 Dixie Highway • Homewood, Illinois

Form-A-Roc • *FIRST COAT*

FOUNDATION FOR FINE FINISH

1. Dries with lacquer speed.
2. Has double lacquer solids at spray gun.
3. Fills very well—sands easily.
4. Adheres tenaciously to steel, wood, presdwood, aluminum, galvanized metal, etc.
5. Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.
6. Thins 3:1 with xylol.
7. Available in GREY, SALMON and OFF-WHITE.
8. Ground well to smooth texture.

MADE BY

THE VARNISH PRODUCTS COMPANY

5206 Harvard Avenue — Cleveland, Ohio

NON-INJURIOUS **ELECTRO** NON-INFLAMMABLE

COLD STRIPPER

FASTEST *in Action* — **LOWEST** *in Price*

WRITE FOR TESTING SAMPLE OR ORDER
5-GALLONS AT DRUM PRICE

Specify whether dip or brush type is desired

Allied Finishing Specialties Co.

2641 W. Grand Ave. • Chicago 12, Illinois

Now! LONG LIFE for Scant Chrome Plating

Scant Chrome Plating (chrome over copper without nickel) can now be made to last even longer than standard chrome plating. Simply spray or dip with Strathmore Clear Chrome and Metal Coating.

These coatings have withstood more than 200 hours of 20% salt spray – far above the 75-125 hour specification for chrome plating. They have strong adhesion to chrome, are highly resistant to abrasion and impact, and can be dipped or sprayed.

There are two types available: Baking type, BAQUIK CLEAR CHROME AND METAL COATING NO. X2534; baking range 250 F. for 30 minutes to 300 F. for 15-20 minutes. Quick-air-drying type, METALBOND CLEAR CHROME AND METAL COATING NO SL-300. Now used by leading auto and metal parts manufacturers.

Write today for data, samples & prices

Strathmore Products, Inc.

Specialists in Fine Industrial Finishes

1970 W. FAYETTE ST. Phone 4-2118 SYRACUSE 4, N. Y.

Finish Problem Solved

• How Glidden Technical Services helped a leading Furnace Manufacturer

Faced with the problem of finding an appropriate sales-inviting finish for this streamlined modern furnace, the manufacturer called on Glidden Technical Service.

Glidden industrial color stylists chose several appealing yet practical colors in a smooth patterned finish. Each was applied to a furnace of the same model, then trade and public preferences were studied. Supported by this evidence, the manufacturer selected a two-tone color combination produced with Glidden *One Coat* Hammerloid and his sales records have proved the wisdom of this choice. Glidden practical service and technical developments have contributed continuously to the economy and efficiency of this fast moving production line.

Whatever *your* finishing problem, Glidden specialists are ready to give you dependable help, without cost or obligation.

THE GLIDDEN COMPANY • Dept. K-751, 11001 Madison Avenue, Cleveland 2, Ohio

Glidden

QUALITY Glidden PRODUCTS

Product Finishes

PAINTS • LACQUERS • ENAMELS • VARNISHES • PRIMERS AND SPECIAL-PURPOSE FINISHES

A NEW

NACROMER N. N. **is excellent for simulated Metallic Finishes.**

We recommend it to lacquer manufacturers as a formulated substitute for . . .

GUN METAL
GOLD
BRASS
BRONZE
COPPER AND
SILVER COATINGS

NACROMER N. N. **is Concentrated, Stable, Non-corrosive and low in price.**

Samples and literature sent on request

THE MEARL CORPORATION

153 WAVERLY PLACE **NEW YORK 14, N. Y.**

"World's Largest Producer of Pearl Essence"

TOUGH AND MARPROOF—Kemclad formulations include special ingredients to protect finish against marring, chipping or scratching.

HOT GREASE? NO HARM DONE! — Even hot grease won't damage Kemclad's gleaming white finish!

STAYS WHITE AND STAIN-FREE! — Kemclad Finishes aren't affected by food acids, weak alkalies, alcohols or other common household chemicals.

CLEANS EASILY...SAFELY! —Kemclad's smooth surface cleans easily with damp cloth, but withstands strong detergents safely.

Photo courtesy Gibson Refrigerator Co., Greenville, Michigan

Well engineered...

TO THE LAST 2/1000 OF AN INCH!

The engineering in the last 2/1000 inch of an appliance—its *finish*—may be even more important than for many of its other parts! Leading manufacturers like Gibson Refrigerator Company prefer S-W Kemclad Appliance Finishes because they provide advantages three ways:

- ***Saleswise,*** **they give the white-for-the toughness and beauty that only the newest developments in synthetic resin materials and know-how make possible.**
- ***Productionwise,*** **they reduce rejects and production line problems.**
- ***Costwise,*** **their high solids content with low viscosity makes finishing cost low for any given thickness of finish.**

Investigate what S-W Finishes may mean in your own production set-up! Call, wire or write The Sherwin-Williams Co., Industrial Div., Cleveland 1, Ohio.

SHERWIN - WILLIAMS
APPLIANCE FINISHES

CIVILIAN PRODUCTION

DEFENSE ORDERS

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

KEMCLAD
•
SUPERCLAD
•
KEMVAR
•
TV LACQUERS
•
HEETCLAD
•
KEMWOOD PRODUCTS
•
DIMENSO

the same dependable source for

• FINISHING MATERIALS
• FINISHING KNOW-HOW

Whether you are buying finishes to meet defense specifications or your own civilian requirements, you can simplify the job . . . find dependable help on special needs . . . eliminate troublesome problems . . . through The Sherwin-Williams Industrial Division with its wealth of know-how and background, both in civilian and wartime experience.

This broad background provides the same extra advantage of experience in Sherwin-Williams finishes supplied to meet military specifications—whether for wood, metal or other surfaces—as in the S-W finishes well known for many years for civilian production, such as Kemclad, Superclad, Kemvar and TV Lacquers. This experience is available wherever you may be, through facilities extending from coast to coast. Call, wire or write The Sherwin-Williams Co., 101 Prospect Ave., N. W., Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

The Truly **DEPENDABLE**

FINISHES and LACQUERS

for WOOD and METAL SURFACES

COAST LACQUERS cost less because we pass along to you the savings made possible by our immediate contact with the huge chemical plants of the Gulf Coast from which we obtain our superior raw materials at low cost. Write for information and prices on . . .

FURNITURE FINISHES **INDUSTRIAL LACQUERS**

GOVERNMENT SPECIFICATION COATINGS AND THINNERS

CPL

COAST Paint & Lacquer Co. Inc.

P. O. BOX 1113, HOUSTON 1, TEXAS

Why the crumple test won't crack

EPON® RESIN finishes!

TWO ALUMINUM TUBES . . . *the one on the right coated with a standard white enamel . . . the left-hand tube coated with an Epon enamel.*

These enameled toothpaste tubes looked alike originally. But after a brutal "accordion" test the Epon resin finish on one remained smooth and unharmed . . . even on the sharp corners! The second tube, coated with a standard widely-used enamel, cracked and flaked off.

The secret of this adhesion lies in the polar nature of the Epon molecule. So outstanding is this property that even an unprimed zinc die casting takes a hard durable finish with a single coat of an Epon resin enamel.

This property plus excellent chemical resistance and flexibility make Epon resins unusually attractive.

• • •

Although the demand for Epon resins is ahead of present production, increased capacity is on the way. Now is the time to develop your formulations based on these new resins. Experimental quantities may be obtained for evaluation.

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

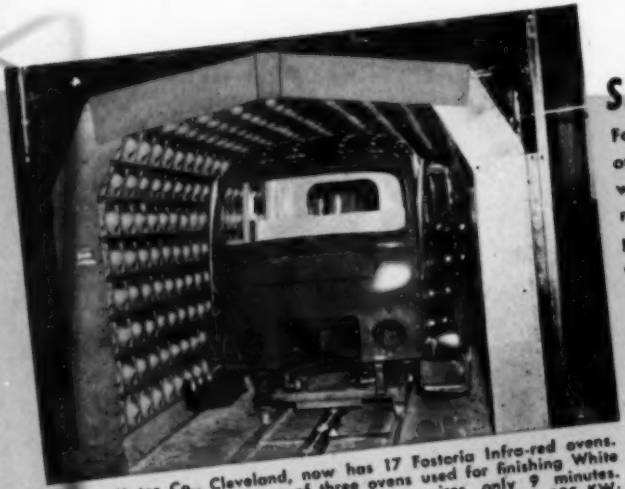
Eastern Division: 500 Fifth Ave., New York 18
Western Division: 100 Bush St., San Francisco 6
Los Angeles • Houston • St. Louis • Chicago
Cleveland • Boston • Detroit • Newark

IN CANADA

Shell Oil Company of Canada, Limited
Toronto • Montreal • Vancouver

Streamline

USE THE MOST EFFICIENT OF ALL



White Motor Co., Cleveland, now has 17 Fostoria Infra-red ovens. The photo above shows one of three ovens used for finishing White 2000 series Power Lift Cabs. Baking requires only 9 minutes. Operating cost is reasonable — dry-off oven, 18' 4" long, 135 KW; prime oven, 29' 4" long, 144 KW; finish oven, 29' 4" long, 128 KW.

The Bersted Mfg. Co., Fostoria, Ohio, Div. of McGraw Electric Co., solved degreasing and paint problems by installing a Fostoria Infra-red oven. Fan guards are finished quickly and efficiently. The first trip through the oven, light oil is burned off. Then black japan finish is baked in 4 minutes. Production is 6,000 pieces per day. Oven is ceiling mounted saving floor space.

SAVES SPACE

Fostoria Infra-red ovens operate on a comparatively short cycle which results in smaller oven requirements. They may be suspended from ceiling mounts to eliminate floor space entirely.

SAVES TIME

Reduces processing time from hours to minutes because of the inherent speed of Infra-red. There is no time lag in starting an oven. Heat is instantaneous.

SAVES MANPOWER—MANHOURS

Ideal for conveyorized production methods. Reduces expensive product handling. Turns out more pieces per day with ease, with less people.

CUTS COSTS

Faster production, lower operating costs, improved quality, result in lower "per piece" cost.

THE FOSTORIA

YOUR FINISHING PRODUCTION *Cut Costs*

INDUSTRIAL OVENS FOR FINISH BAKING

FOSTORIA INFRA-RED

You'll be amazed at the savings you can make in space, time, manpower and costs — the marked increase in the efficiency and quality of your finishing production—by modernization with a Fostoria Engineered Infra-red Oven. *A Fostoria Infra-red System out-performs any other equipment on the market today.* Fostoria exclusive engineered features guarantee the fastest, finest finish baking at lowest "per piece" production cost. Bring your finishing production facilities up to date by modernizing, now, with Fostoria Infra-red. Case histories of installations applicable to your production are available on request.

GET THE COMPLETE FACTS!

Write, today, for factual folder on the Fostoria Infra-red System. Technical data application to your operations will be included if you send us general facts about your problems.

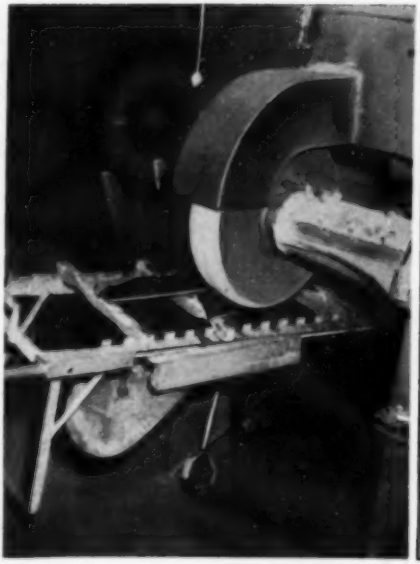
★ At your request, a Fostoria representative will gladly analyze your production needs and submit definite recommendations with carefully forecasted results for your consideration.

INFRA-RED fostoria SYSTEM

PRESSED STEEL CORPORATION, Fostoria, Ohio

Oldest and Largest Manufacturers of Industrial Infra-red Ovens

ALOXITE TP Grain for Top Performance



You can get finest results in polishing at low cost by selection from CARBORUNDUM'S ALOXITE aluminum oxide "TP"-series grain. The "TP" series features uniform size grain particles of controlled toughness and temper, in these types:

ALOXITE TP—tough, blocky grain with maximum efficiency for high stock removal. Recommended for polishing steel and other metals of high tensile strength.

ALOXITE TPC—medium sharp, tough grain. A general purpose grain well suited to polishing where small amount of metal removal is desirable.

ALOXITE TPT—sharp, extra-tough grain with clean cutting action that reduces finishing time in operations involving high stock removal.

See your CARBORUNDUM representative, or write Dept. IF 83-7 for illustrated booklet giving full details.

● *The brand name* CARBORUNDUM *identifies a* ***complete*** *line of coated, bonded and grain abrasives for metal finishing operations.*

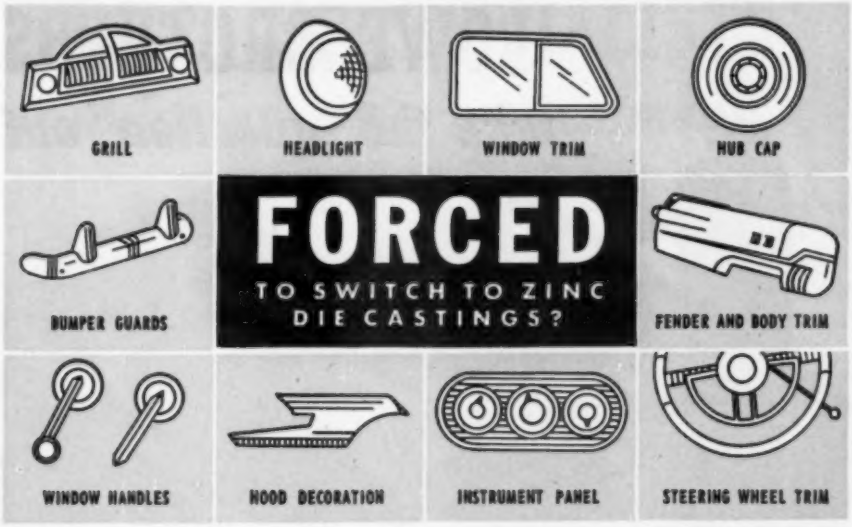
POLISHING GRAIN by

CARBORUNDUM

TRADE MARK

"Carborundum" and "Aloxite" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

83-7



Protect them with M & W Clear Coatings that stand 800 HOURS OF SALT SPRAY!

Zinc die castings and zinc plated steel are being used more and more as big manufacturers swing to these parts to replace unavailable materials. BUT the copper, nickel and chromium normally used for plating are in tight supply *too.*

Here's an effective way to meet this new problem. *Coat the die castings and zinc plated steel parts—instead of plating them!* Coat them with the M & W finishes that stand up under salt spray and weatherometer tests for the extraordinary period of 800 hours . . . that protect the zinc against discoloration!

Use DULAC Clear Universal Lacquer #462 if you want an air-drying lacquer—CODUR Clear Synthetic Y743 for baking. They both give the same exceptional performance. Write for free Technical Data Bulletin #110, or let our M & W technical consultants discuss your requirements with you.

PIONEERS IN PROTECTION

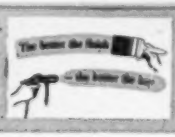
75th ANNIVERSARY M&W CO. 1876

MAAS & WALDSTEIN CO. 438 RIVERSIDE AVE. NEWARK 4, N. J.

MID-WEST DIV.-1658 CARROLL AVE., CHICAGO 12, ILLINOIS

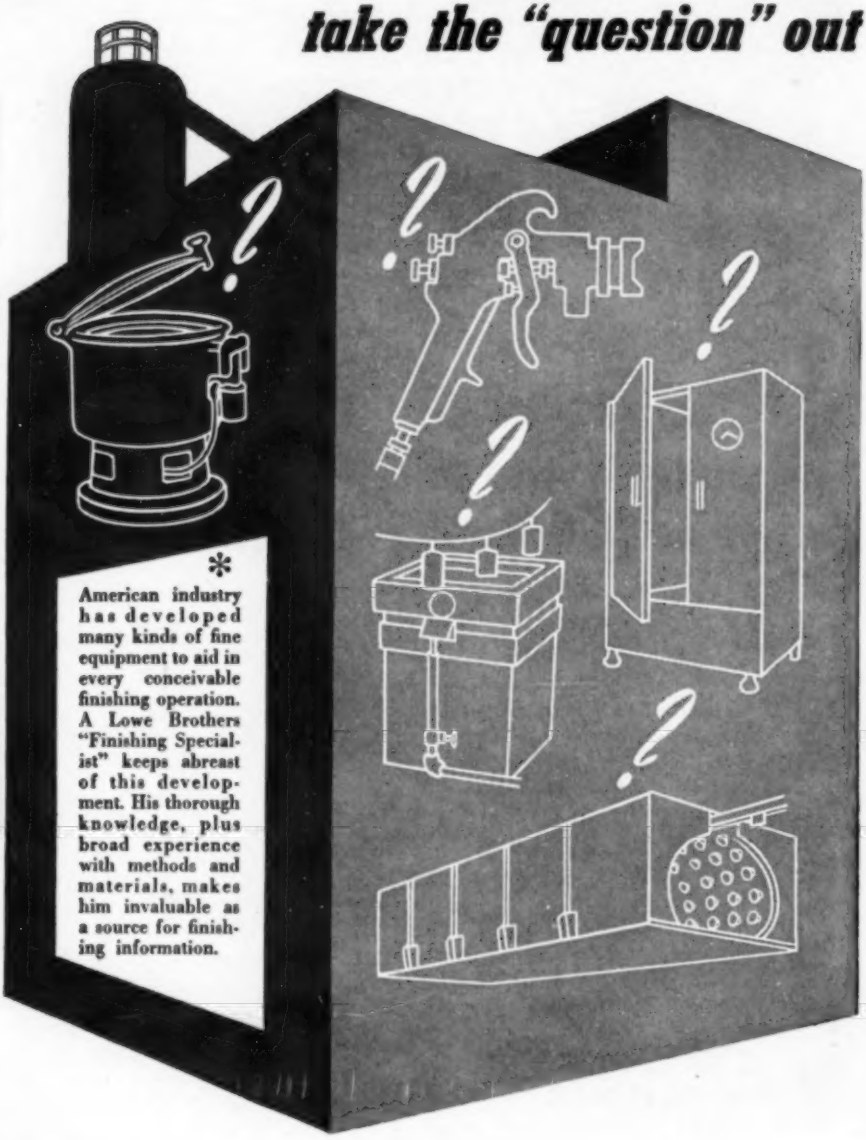
PACIFIC COAST DIV.-SMITH-DAVIS CO., 10751 VENICE BLVD., LOS ANGELES 34, CAL.

MANUFACTURERS OF INDUSTRIAL FINISHES



LOWE BROTHERS

take the "question" out



*

American industry has developed many kinds of fine equipment to aid in every conceivable finishing operation. A Lowe Brothers "Finishing Specialist" keeps abreast of this development. His thorough knowledge, plus broad experience with methods and materials, makes him invaluable as a source for finishing information.

"FINISHING SPECIALISTS"
of finishing system investments

Where do you begin and where do you end when setting up a system for finishing a new product? A Lowe Brothers "Finishing Specialist" is your dependable source for the *right* answers to questions concerning equipment investments in your finishing department.

Today, there are literally hundreds of different kinds of finishing department equipment you can buy. Unless you are fully familiar with the very latest finishing methods and materials, it would be wise for you to consult a "Finishing Specialist" as well as the equipment manufacturer when setting up a finishing system. Then you will be sure to install the type of equipment which will do your particular finishing job best.

A Lowe Brothers "Finishing Specialist" *knows* from current experience the proper types of equipment,* methods and materials that will meet *your* requirements most economically and assure best finishing results.

Countless manufacturers have benefitted immeasurably from having a "Finishing Specialist" analyze their complete finishing operation and offer recommendations based upon his sound, up-to-date knowledge of equipment and materials. No obligation for this service. Write for details today.

THE LOWE BROTHERS COMPANY • INDUSTRIAL DIVISION
DAYTON 2, OHIO

LEADERSHIP THROUGH CONSISTENT SERVICE

Lowe Brothers
FINISHES FOR INDUSTRY

DEVILBISS

Profit with DEVILBISS

DeVilbiss Products — Spray Equipment, Exhaust Systems, Air Compressors and Hose — have found wide application in the finishing departments of nearly every important industry. The broad experience gained here will help you cut costs and improve quality. A phone call or letter will bring you helpful information.

Air Compressors

Hose and Connections

Spray Guns

Spraying that's in tune with the times

THIS custom-made cabinet, receiving its finishing coats of stain from a DeVilbiss MBC Spray Gun, will soon be a treasured addition to someone's home.

The high-quality finish it gets here will determine, to a large extent, the buyer's satisfaction with his purchase.

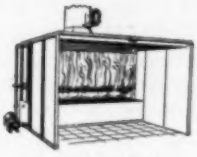
This DeVilbiss Spray Booth (one of many types) properly exhausts all fumes, overspray and vapors; provides ideal conditions for spray operators. Safety-approved lights illuminate the work so every detail can be properly coated and blended for a perfect job.

Product improvement through better finishes is typical of DeVilbiss service and quality products—Spray Equipment, Exhaust Systems, Air Compressors and Hose. A call to your nearest DeVilbiss Branch Office will bring you complete information.

THE DEVILBISS COMPANY, Toledo, Ohio

Windsor, Ontario • London, England • Santa Clara, Calif.

Branch Offices in Principal Cities



Spray Booths

FOR BETTER SERVICE, BUY

DEVILBISS

How Much Should I Know About Paint?

What the foreman of a finishing room or paint shop needs to know about materials he uses; why and where this information can help him to avoid most of the trouble and headaches that show up so frequently.

By Paul E. Hopkins
Technical Sales Representative

IN THESE DAYS of more exacting finishing standards of quality, the finishing foreman is often confronted with problems for which the answers are only obtained with a detailed technical knowledge. In many cases these problems can be answered by the technical serviceman of the paint manufacturer supplying the paint needs. However, the finishing foreman's job is simplified when he can resort to his own technical understanding of the material he uses. Therefore, the more basic his understanding of paint, the simpler is the solution of what could seemingly be a major production problem with its accompanying loss of time, labor and raw material.

The formulation and manufacture of paint is not an exact science, nor is its application in a production schedule. In a finishing foreman's quest for knowledge that will bring the problems in his job to an irreducible minimum it is possible for him to clutter up his mind with paint facts so technical as to bring only great mental confusion. He might, therefore, find himself in the position of not being able to see the woods for the trees!

Things You Need Not Know Too Intimately

Thus, poses the question: Just what, as a paint shop foreman, should one know about the materials and equipment with which he works; and what need he not know?

Let's take the latter part of the question first. In maintaining uniform finishing standards of quality it should not be to any particular advantage to know the pigment-to-binder ratio of the material being used, or its oil length, or a score of other factors that had to be considered by the formulator when putting the material together.

It also should not be to any particular advantage to know, too comprehensively, the fundamental differences between urea-melamine-alkyd and modified silicone, and the various other resin combinations. It also should not be too important to the foreman to know the percentage of solids in a specific material, al-

Practical Publications, Inc.,
1142 North Meridian St.,
Indianapolis 4, Ind.

Att: Mr. W. H. Rohr, Editor.

Dear Mr. Rohr:-

For several years I have been an avid reader of your stimulating magazine, "Industrial Finishing". Along with almost every other reader I have had, over the years, some things I have wanted to get off my chest.

In keeping with your excellent policy of welcoming guest editorials, I am herewith submitting an article which might have some merit in guiding finishing shop supervisors through their oft times complicated responsibilities.

I trust this attached article will be considered provocative enough to find a place in your excellent periodical. Keep up the good work.

Yours very truly,

Paul E. Hopkins

Paul E. Hopkins
Technical Service Representative.

though this factor is, and justly so, a vital one for the purchasing agent and engineering department.

There are some facts about any specific paint being used which, if not known, can alter a foreman's tranquillity to a point almost beyond repair. Where a baking paint is used, the required baking schedule, as recommended by the paint manufacturer, may be given in specific terms, such as 30 minutes at 300° F. Often times the available baking cycle in the paint shop will not be an exact 30 minutes; it may be longer or shorter. A shorter cycle can be compensated for by setting the oven regulator to a point above 300° F; and, where the cycle is longer than 30 minutes, the oven regulator can be set to below 300° F. These facts are fundamental and the actual oven temperatures needed for any given cycle can be determined by the paint supplier.

Minimum and Maximum Baking Heats of a Paint

In connection with the use of oven-bake materials there is one fact the foreman should know. In the case of "hi-bake" materials, *there is usually one resin ingredient that requires a certain minimum temperature for conversion to the film state that gives the finish the optimum physical properties for which it was formulated.* If the foreman does not know this minimum temperature permissible, he

may deem it advantageous, for economic reasons, to drop the temperature to below the conversion point or speed up the line to a point where the painted part is not in the oven long enough for it to receive an adequate bake.

Conversely, a maximum temperature is sometimes a factor. If the baking cycle is short and it is deemed necessary to "jack the temperature up, it may be boosted to a point where over conversion of the film results. This could also markedly change the desired physical properties.

Be Well Versed on The Solvents Used

The finishing shop foreman should also have better than smattering knowledge of the various solvents available. Most materials will not tolerate some solvents and, in the case of some of the newer "super duper" finishes now available, solvent combinations of esters, alcohols, or hydrocarbons are required.

A well versed understanding of solvents will also include some knowledge of the evaporation rates of various reducers and their accompanying differences in solvency. This information would enable the foreman to reckon with a variety of problems; for example, viscosity control, flash-off time, elimination of runs and sags, orange peel, tank stability, etc. The subject of solvents is too voluminous to dwell at any great length here; but suffice to say, the finishing foreman can't know too much about this aspect of his job.

No article on this subject would be complete without emphasizing and re-emphasizing the importance of paint shop maintenance. *High quality finishing standards can only be maintained with equipment kept in topmost condition.* The greatest abuse of such equipment is the almost universal practice of improper methods of cleaning spray guns.

To Clean Spray Guns and Paint Circulating Systems

Complete immersion in a can of solvent is common—with air bleeding and irregular spray pattern the result. One need only to study the makeup of a spray gun to understand that a solvent dunking means destruction of the graphite packing so necessary to good operation of spray guns.

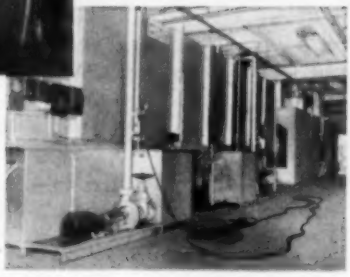
Another important part of paint shop maintenance is proper periodic cleaning of circulating paint systems. This need not be done often; in many cases once a year will suffice. When it is done, however, the previously mentioned knowledge of solvents will tell the foreman just which solvent would make the best flushing agent. It might not necessarily be the solvent used for reducing the paint that is circulated, as in the case of many "hi-bake" enamels. Here the solvent used for reducing the material can generally be used in combination with butanol and, in most cases, it will be a far better flushing agent.

Air Pressure Regulation; Control of Paint Viscosity

Air regulators are also recipients of abuse in too many paint shops. A study of the mechanics of this gauge would reveal the importance of backing off the regulating screw after each day's operations. This

3 MEN OPERATE THIS ENTIRE FINISHING SYSTEM

The Newly Installed Finishing System at THE RANDALL CO.



FROM START— TO FINISH

With the demand for skilled labor constantly exceeding the supply, efficient utilization of the available labor supply is important in your finishing operation. This finishing system at the Randall Manufacturing Co. was planned by Young and Bertke to operate with minimum manpower. Only three men are used in the operation. Perhaps your present finishing system can be designed to operate more efficiently. Or you may be contemplating a new one. In any case write us; we'll be glad to help you.

BRING YOUR FINISHING PROBLEMS TO AN EXPERT

YOUNG & BERTKE

2235 Buck Street, Cincinnati, Ohio

takes tension off the diaphram and maintains the regulator's accuracy so that when the gauge tells the foreman he is getting 60-lbs. of regulated air, he knows he is getting 60-lbs.

There is still another important means of making the paint foreman's life a cheerier one. That is the recognition of *the need for proper viscosity control.* In most cases, the paint shop is affected by temperature changes from one part of the day to another and from season to season. Today, many paint shops are achieving good viscosity control by means of the use of paint heaters. Paint heating equipment manufacturers too often emphasize in their advertising literature the savings obtainable in solvent; but probably the greatest single advantage to be gained from the use of heaters is the excellent viscosity control they afford.

Paint manufacturers would do well to point up the importance of viscosity control to their customers. It would eliminate such happenings as this: Paint is mixed and reduced for the day's work in the early morning when it is cold from standing in a cold factory all night. By mid afternoon, the warmest part of the day, the viscosity has dropped to where "light" work comes off the line. To offset this change in viscosity the paint mixer might add some unreduced paint to bring up the viscosity, but this results in poor uniformity of work and, if the facts could be known, paint waste. This waste comes about because the spray painter has to make more passes with his spray gun when the material is low in viscosity—with the accompanying greater overspray loss. He makes these extra passes out of fear of runs and sags. The best viscosity control possible can save hundreds of dollars annually in a painting operation. [END]

Thomas A. Armel Wins The Glidden Salesman's Award

The Senior Salesman's Award of $1,000 (outstanding sales achievement in 1950 in a division of The Glidden Co.), was won by Thomas N. Armel, industrial salesman for Glidden's Nubian Paint & Varnish Division in Chicago. The prize in this year-long contest is awarded on all-around sales.

The award winner, Mr. Armel, is 33 years old and lives in Chicago. He sells industrial finishes produced by the Nubian Division, one of the large Glidden Co. industrial finishes units, and numbers among his customers some of the largest appliance manufacturers.

DeVilbiss Field Men Attend Refresher Courses

Sustained nation-wide efforts to sell DeVilbiss Co. products and demonstrate their full and multiple uses were emphasized June 28 at the last of a series of refresher courses for DeVilbiss field representatives in the spray finishing equipment division held at the company's research center.

Twelve company representatives from Ohio, Michigan, Pennsylvania, New York, Washington, D. C., Arkansas, Texas and Missouri attended. The session lasted for three days; it is the fourth and final one of a series which saw most of the other states of the union represented at meetings in April, May and early June.

Study of the plant, advertising program, government regulations, engineering and research progress, new products, improvements in old products, were on the agenda.

"Our problem throughout the nation is to meet the demand for our products, to comply with governmental regulations and restrictions and to fully inform users of DeVilbiss equipment so that maximum results may be obtained from it," Henry M. Kidd, division sales manager, declared.

PUTTING ~~IT~~ Dust

ON THE LINE WITH TORIT DUST COLLECTORS

In this line up there are six small wheels and disks, all connected to one Model 84 Torit Dust Collector. These are being used to finish small wooden parts, but the set up is equally applicable to metal, plastics, or other materials.

This installation well illustrates the adaptability of Torit Dust Collectors to production line operations. Pipes, collecting hoods, and even the dust collector are located so they do not cut off light or interfere with the work. Efficiency, too, is high.

There is a Torit Dust Collector for your dust collecting job. You'll find it economical to install and exceptionally low in operating and maintenance costs. For details, and latest Torit catalog, write:

TORIT Manufacturing Co.

300 Walnut Street St. Paul 2, Minn.

TORIT FB Type Dust Separator

Torit also manufactures a line of cyclone type dust separators. These can be ordered with an after-filter, as shown above, which permits recirculating the cleaned air within the plant.

Finishing the

Here we have cleaning of metal parts, phosphatizing their surfaces, rinsing, dry-off, tack rag wiping, dip coating and spraying prime coat, baking, sanding; then tack rag wiping again, spraying top coat and final oven baking.

BY C. P. NIDRABSEY

THE OUTER SHELL of Hotpoint's home washer is made of sheet steel finished in synthetic enamel. The lid where clothes are put in and taken from the washer is made of aluminum, also finished in white synthetic enamel. The steel top and tub are finished outside and inside with porcelain enamel.

Finishing Rooms Pressurized With Filtered Air

To obtain a smooth clear white finish, constant care is exercised throughout all operations — from metal cleaning to final baking. The dip room as well as the spray rooms, including the space between the booths and the ovens, are pressurized to prevent dust particles from contacting the wet coated surfaces. Into each room 20,000-cu. ft. of filtered air is injected every minute. Exhaust fans remove 18,000-cu. ft. of air per minute. The plus factor (built-up air pressure within the rooms) of 2000-cu. ft. per minute is sufficient to keep out dust and flying particles. All air brought into these areas, as well as that entering the bake ovens, is drawn through self-cleaning filters.

All parts for washers are suspended by hooks from an overhead monorail conveyor; the hooks are spaced on 32-in. centers. This conveyor is driven at the rate of 8-ft. per minut,e through a variable-speed drive. Parts enter the metal washer where the first and second stages are identical in that a phosphatizing cleaner (heated 140° F.) is sprayed on at 25-lbs. pressure from four sides. This is followed by a cold-water rinse. In the last stage, a mild phosphoric-chromic acid (also heated to 140° F.) is sprayed over the metal surfaces to be painted. Then follows a 4-min-

Hotpoint Automatic Washers

ute trip through a dry-off oven (350° F.) followed by 15 minutes of travel at room temperature to allow the parts to cool off.

Some Parts Dipped in Primer; Others Are Sprayed

The pressurized dip and spray rooms are located on a high level balcony. Just before parts enter the prime dip room (still hanging from an overhead conveyor) their surfaces are blown clean with compressed air and thoroughly tack ragged.

Hotpoint does not use the conventional conveyor travel dip; that is to say, the conveyor line is not depressed over a dip tank. Instead, an operator using a high-speed air hoist, removes a loaded rack containing washer components, lowers it into the 400-gallon prime tank, then raises it to be replaced on the overhead conveyor.

Reason for this arrangement is that all washer parts traveling on the overhead conveyor do not get a prime dip coat. For instance, the aluminum lids are allowed to pass by the dip tank; they receive a sprayed coat of zinc chromate primer in the spray booth. It would be impractical to separate all of the lids from the other parts on the line, as a complete set of washer parts is finished on every pair of hangers on the conveyor. The man-

Dip-coating setup wherein racks of work are detached from conveyor and let down into a tank of prime coat material, with an air hoist, then lifted upward and hung to the chain conveyor.

Close-up of operator who has detached a rack of parts from conveyor hook and is letting the loaded rack down into a tank of prime-coating material. After dipping, the rack of parts will be hoisted up and again hooked onto the conveyor.

agement has found that air-hoist vertical dipping more than offsets the expense of the operation, as compared to conveyor dipping, both in quality of work and flexibility of operation.

For the outer shell, base and front panel, all of which receive a dip coat of primer, a gray synthetic enamel is used at a viscosity of 26 seconds at 78° F., as measured with a No. 4 Ford cup. All of these washer parts are attached to a special rack constructed so that the parts will enter the dip tank for quick and complete coverage, and leave the tank in correct position for fast and complete drainage.

As the loaded racks of wet dip-coated parts advance over drip pans they pass through a spray booth. Here the first operator inspects them for complete primer coverage and does any necessary touching up by spot spraying. The second operator sprays a black synthetic enamel on the kick plate at the bottom of the front of the outer shell. This offset space is sometimes referred to as "toe space".

These same two spray operators complete the undercoats on aluminum lids as they come through the booth on the conveyor. The first operator sprays on zinc chromate primer which dries very quickly. The second operator sprays on the gray primer which is the same material as is used in the dip tank. All prime-coated parts then enter a bake oven where the primer coat is baked for 30 minutes at 260° F.

Primer Coat Sanded; Double Top Coat Follows

Upon leaving the prime-coat oven, the parts in process travel for about ten minutes to cool. Then a strip of pressure-sensitive heat-resistant masking tape is placed over the black enameled kick plate at the bottom of the front of the outer shell to protect this area from a subsequent coat of white enamel.

The prime coat is sanded with No. 7/0 sandpaper. This operation is performed at floor level. Just before the parts enter the top coat spray booth their surfaces are blown clean with compressed air and tack ragged. A white synthetic enamel is sprayed on at 75-lbs. atomizing pressure and 7-lbs. fluid pressure at the gun. The viscosity

Blitz Cans... a natural for RANSBURG ELECTRO-SPRAY!

HERE'S WHAT RANSBURG CUSTOMERS REPORT ON BLITZ CAN PRODUCTION

One plant runs a line at 18 fpm, producing 12,000 to 13,000 cans a day. Paint saving amounts to 2½¢ per can over former hand-spray method. Doesn't sound impressive in pennies, but total saving per month amounts to $6,000! And, spray labor costs are reduced, accounting for another monthly savings of $2,500.

Another Ransburg customer reports paint savings of well over 50% of amount used by hand-spray methods in World War II days. Labor requirements are reduced substantially. And, cans are more uniformly coated, giving added protection against rust and corrosion.

Another RANSBURG ELECTRO-SPRAY user produces 5,000 Blitz Cans a day and reports 160 units per gallon!

In Defense Work—as in civilian production—RANSBURG ELECTRO-SPRAY consistently cuts costs . . . increases production . . . improves quality.

Why not let Ransburg engineers analyze your paint requirements? Write or call.

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

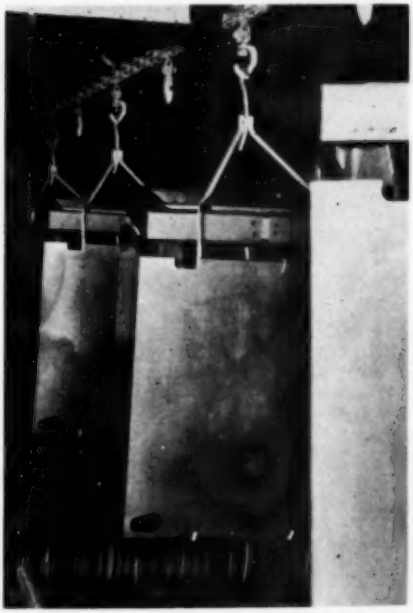
RANSBURG

Spraying white synthetic top coat enamel in a water-wash spray booth. Fluorescent tubes (behind glass above) provide plenty of light. Cleanliness is the watchword in this air-pressured spray room.

is 32 seconds at 78° F., as measured by a No. 4 Ford cup. The top coat is really a double wet coat, as each operator applies one coat. There is approximately five minutes elapsed time between coats, and about six minutes flash (air drying) time is allowed after the second coat before the enameled parts enter the finish bake oven where the top coat enamel is baked for 42-minutes at 295° F. All ovens are indirect gas-fired convection type—and, in the finish oven especially, an accurate and uniform balance of fresh filtered air is maintained at all times to prevent discoloration of the white coat of enamel.

Work leaving the top coat oven cools as it travels to the inspection station. Here, under adequate fluorescent lights, all parts are inspected as they are transferred to another overhead conveyor which carries them to the assembly lines. Again, these washer parts are transferred in such a way that parts for a complete washer are included on every two hooks. This arrangement expedites assembly of the washer as all required parts are conveniently at hand.

A paint mixing room and central supply system furnishes primers and top coat enamels to all spray



Racks loaded with work entering the baking oven where white top coat enamel is baked.

for volume finishing

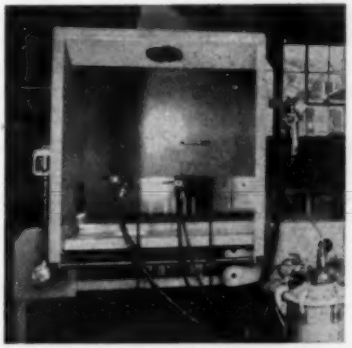
OF DEFENSE PARTS

CAPITOL HIGH SPEED

ELECTRIC SPRAY-BAKE

CONVEYOR MACHINE

It will accommodate pieces of from less than 1-in. diam. to over 12-in. diam., which require a high quality finish, such as shell noses, cartridges, weapon parts, also clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electric strip-heated bake oven from which they emerge for a cooling period before being removed.



View of booth showing automatic spray guns — lower view shows conveyor arrangement and drying and baking compartments.

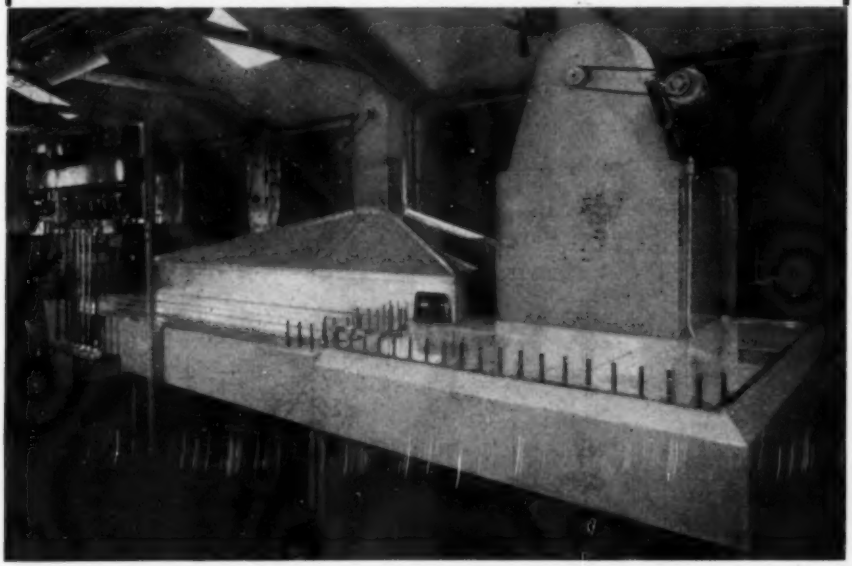
Recommended for speedy, high quality production, and exceptional savings in coating pieces of various sizes and shapes that are difficult to handle.

LET US MAKE A TEST RUN OF YOUR OWN WORK SAMPLES— NO OBLIGATION.

WIRE, PHONE OR WRITE

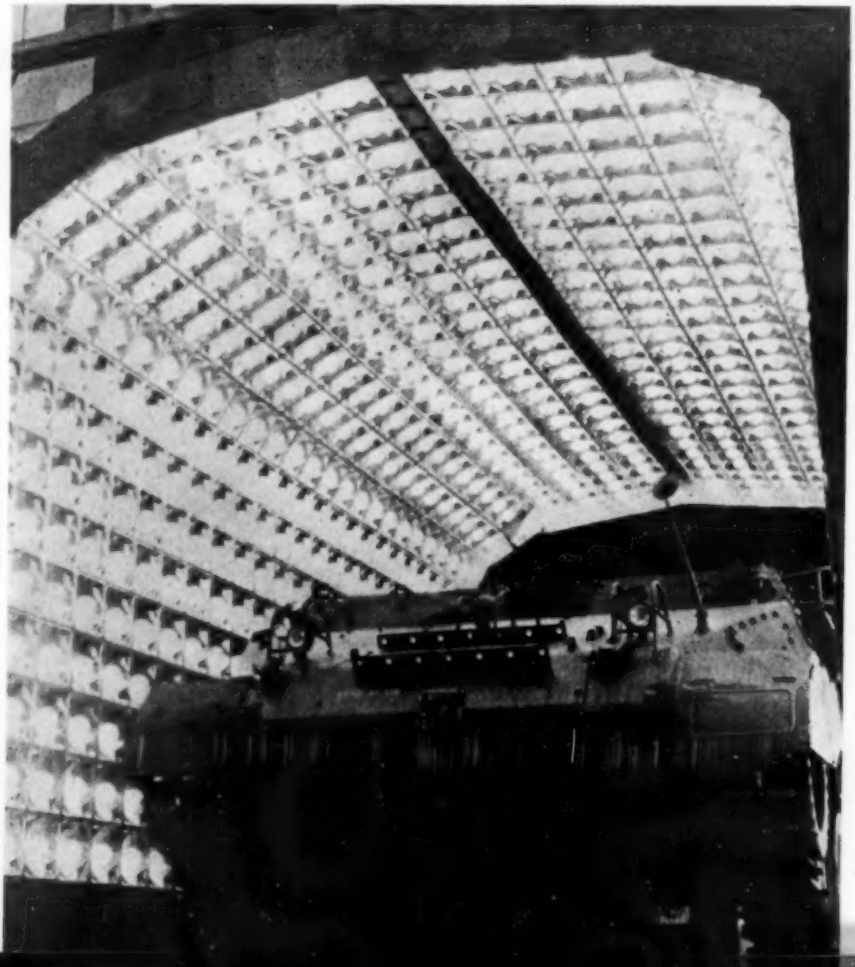
The CAPITOL MACHINE COMPANY

DANBURY, CONNECTICUT **Tel. Danbury 3-2758**



booths. In this room there are four 200-gallon tanks, two for mixing and two for supply. Material is pumped out through the pipe line system at 40-lbs. pressure and returns at 10-lbs. pressure. All material is filtered as it returns to the supply tanks. A careful check of the viscosity of the dipping primer is made at regular intervals so that solvents may be added to maintain the viscosity at the correct level at all times. This is highly important for good dip coating.

Tanks are Rolling! At Red River Arsenal, the paint job on tanks is cured as they move through an infra-red tunnel. Clear lamps set in wide-angle, gold-plated reflectors provide a highly reflective wall which practically surrounds the tank. This, it is said, produces rapid and complete baking cycle, using all of the infra-red rays, both direct and reflected.
Photo, courtesy of Fostoria Pressed Steel Corp. Official Dept. of Defense photograph.



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Whether your problem is to develop a finish to add life and durability to your product — one to perk up sales appeal — a finishing system to speed up production—or a formula to meet defense work specifications — it will pay you to call in an Egyptian Sales Technician.

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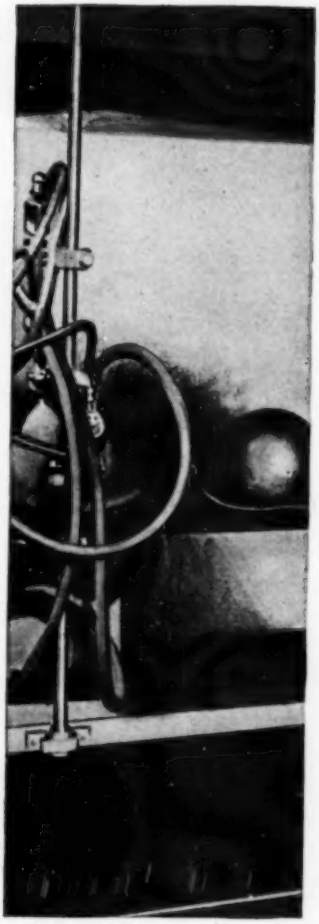
Production line . . . or It's the Finish

A fighting man's life may hang on as thin a thread as the finish of his equipment! Whether it's guns or communications equipment, food containers or helmets, the finish is vital. That's why it's so important to consult an Industrial Finishes Specialist before you start producing on defense contracts.

For instance, the finish on helmets must be able to withstand weather, abrasion, salt water —even frequent use as a cooking utensil! In texture and color, the finish must blend with the ground, and, of course, it must be of extremely low light reflectivity.

In communications and fire control equipment, electronics and transport, the problems multiply tremendously. But the answers are usually as close as your telephone.

Just call an Industrial Finishes Specialist, whether you're manufacturing defense or civilian products. He can help you meet government specifications, speed up production, increase the quality of your products, and maybe even save on costs. Remember, more and more of your customers *start buying with the finish in mind!*



Be sure to consult an Industrial Finishes Specialist!

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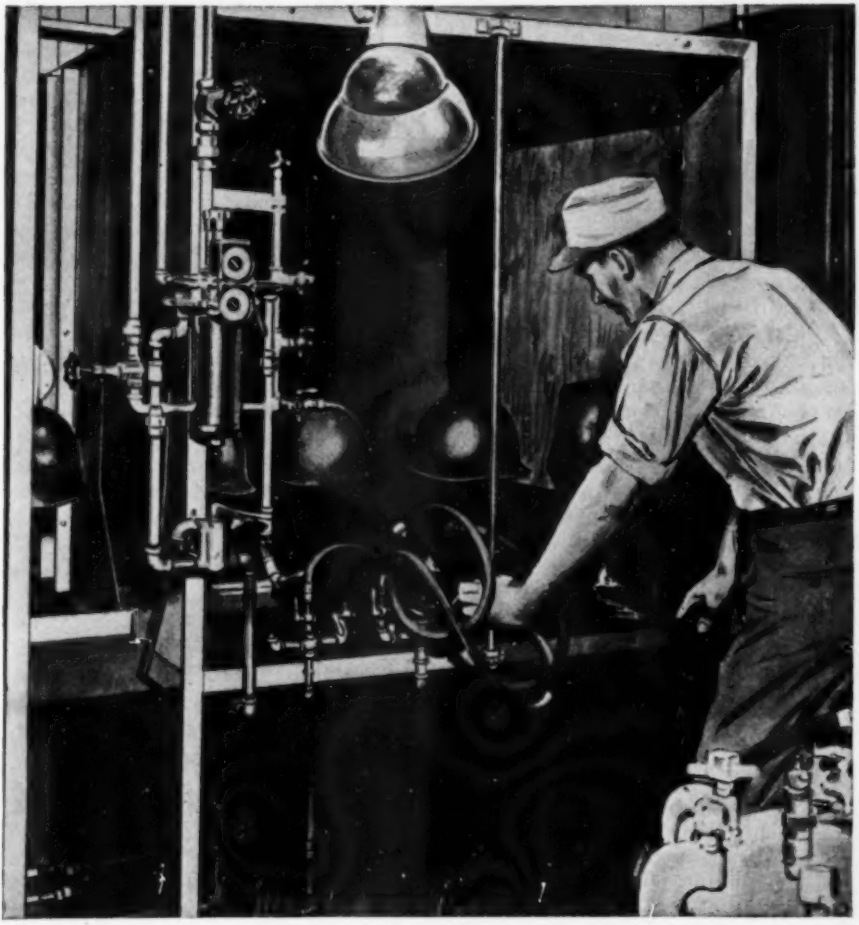
front line that counts!



Portable Power Sanders

By G. A. Conrad

MOST OF THE men who are responsible for production results in finishing rooms now recognize some of the merits and possibilities of portable power sanders. Even in small shops one or more of these machines is usually well worth the investment. I am referring, of course, to standard industrial tools put out by reliable manufacturers. An experienced operator with a good sanding machine can easily do as much work as three hand sanders—and he can do quality work too.

Aside from speed, the machine shows other advantages over hand sanding. Its rapid movement tends to throw out the particles removed instead of imbedding them in the abrasive paper, consequently the sandpaper will remain sharp and capable of cutting for a greater length of time.

Speed and Weight of Sanding Machines

There is also the matter of scratches. While most of the portable sanding machines are rather heavy, their weight is bourne by and equally distributed over the comparatively large area of the flat sanding pad or pads. Again, the rapid uniform motion of the pad tends to erase its own tracks; it rides over the surface without "digging in" as a human hand will do, consequently an abrasive a grade or two coarser can be utilized for a comparable job. For instance, a machine using No. 320 sandpaper will rub a cabinet smoother than can be done with No. 400 sandpaper by hand.

Portable sanders are driven either electrically or by compressed air. They may be further classified by the type of sanding device. While belt or rotary disc machines find their place with the cabinet maker and metal worker, the finisher finds either the straight-line or orbital-action machines more suited to his needs. With the proper pads and the wide selection of abrasives manufactured today, the jobs for these versatile machines are legion. Removing rust from metal, smoothing metal surfaces, cutting down surfacer, sanding wood in the white, padding filler, or any of the rubbing or compounding of top coats—all of these jobs can be performed easily and rapidly when done mechanically.

Choice of Machines; Consider All Conditions

Several factors are to be considered when the prospective purchaser is about to select a portable power sander. Is it going to be moved from place to place a great deal or used by other departments? Is the compressed air supply limited either in quantity or location? Sometimes electricity is the only or the most available source of power. If electricity is used the machine

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It is the end result that counts and it is generally "Penny wise and pound foolish" to experiment with cheaper finishes. The important production cost savings are made in reducing man hours of labor per unit of production, and quality finishes contribute materially to this end.

If you are planning to convert your finishing production to Conveyor Line Finishing, our technical men have the "know how" to set up your schedule of operations and to recommend the materials to be used. They are at your service, without obligation. A phone call, a wire or a letter will give you the details of the recommended procedure to work out and solve your particular problems.

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should have a switch that will open whenever the circuit is broken, to prevent the machine from running away if plugged in from a distance.

Perhaps you plan to do wet sanding or rubbing, working under conditions that would make electricity a hazard. In this case, the pneumatic machine is safer—and its speed can be varied within a considerable range; also, it will stop when operator's hand is removed.

The orbital movement is perfectly satisfactory for most types of work; these machines are usually smaller and lighter. However, if work on wood is contemplated, the straight-line movement is usually more desirable because wood sanding and rubbing must be done parallel with the grain of the wood. Swirls or cross-grain scratches would show up in the finish. For some work, easily exchangable pads are a great convenience; for others, permanently fixed pads will do.

Size of Paper to Fit Pads on Machine

The pads should utilize the required size of paper or cloth with a minimum of waste. The holding devices should grip the paper firmly and pull it tightly across the pad. Loose paper can reduce the machine's sanding efficiency by as much as 75%. Flimsy holding devices will soon weaken.

Much of the trouble attributed to sanding machines is due to careless loading of the paper. Abrasive paper or cloth can be bought ready cut to size for all standard machines. For some users, however, it is more practical to cut the sandpaper from standard sheets. Never insert more thicknesses of a given size abrasive paper than the maker recommends. Little is gained by loading the pads in multiple, as the sheets underneath may become loaded with paper from the backs.

Lastly, some air sanders require lubricators in the compressed air line. Keep them full, but avoid excessive oiling which might mar the finish.

Ray Syer Is Finishing Technician for Rheem Mfg. Co.

For setting up standards procedure, maintaining quality controls and economical operation of everything connected with metal surface preparation and the application of paint materials to a variety of civilian and defense metal products manufactured in its eight factories, Rheem Mfg. Co., South Gate, Calif., has appointed C. Raymond Syer as Finishing Technician. Mr. Syer is now a member of the company's engineering department, as assistant to the Standards Engineer, in setting up standardization procedures pertaining to finishing activities.

Mr. Syer was formerly an independent engineering consultant, specializing in modern finishing procedure.

Important Personnel Added to Burdett Mfg. Co.

George J. Fouser, who joined the company in an executive capacity, has been elected Executive Vice President. Mr. Fouser was formerly president of the Universal Business Machines Corp., Middletown, Conn.

Mr. R. H. Lauer of Grand Rapids has joined Burdett as sales manager of the Sheet Metal Division. Mr. Lauer was formerly sales manager of a firm in Grand Rapids, Mich. He has been associated with industrial oven manufacturing and sales for 25 years.

Mr. Joseph Sodoma, Maplewood, N. J., has joined Burdett as New Jersey and New York sales representative.

Ind. Tape Promotes B. M. Austin

Industrial Tape Corp., of New Brunswick, N. J., a subsidiary of Johnson & Johnson, announces appointment of Benson M. Austin as Product Manager of its Industrial & Commercial Department.

Mr. Austin, who was formerly Division Manager in Chicago, has been with Industrial Tape since 1945. Before that, he was with the General Motors Corporation and the Gulf Oil Company.

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PUTTING A HIGH CLASS FINISH ON *Aluminum Castings*

BY SEYMOUR C. RUBENSTEIN

General Manager H. I. S. Enameling Corp.

A method of finishing aluminum castings — putting on a really high quality bake finish — and not getting into any trouble with the usual blisters and pin holes.

A GREAT PART of the work we do here is the enameling of modern dental and medical equipment. Most of this equipment—namely the X-ray machines, dental units and chairs, etc.—is made up essentially of aluminum castings. We have had marked success in the finishing of aluminum. Other finishers with whom we are acquainted have had to resort to lacquering the last coat, or some other like expedient because, try as they would, the telltale blisters—the mark of cast aluminum—would show up in the last coat.

Actually only a little knowledge of what causes the trouble goes a long way toward alleviating the difficulty.

What Causes Blisters in Finishes on Cast Aluminum

Basically, the cause of blisters lies in the porous nature of aluminum. *The fundamental concept which we use, and which we have found to be successful, is not to seal these pores but to allow the air and gases in these pores to escape.* I hastily submit that sealing by use of a number of coats of primer and top coats is a valid procedure for some types of jobs, provided that little or no sanding is done between coats, and provided the baking temperature is kept at a minimum. However, this method could not result in a high grade bake finish, and it is risky at best.

I would like to give a resume of our typical operations on an aluminum casting. It will be noted that all of these operations stress *light coats of paint and long air drying periods.*

Surface Prep.; Mist Coat of Filler; Bake; Putty; Dry; Sand

After wire buffing, if necessary, and degreasing, a light coat of filler is sprayed on. This first coat should be hardly more than a mist coat.

Some finishers prefer to preheat their aluminum casting before any

spraying operations are attempted. This is an entirely satisfactory method for forcing out air, gases and other residual elements which vapor degreasing will not entirely remove. I do not consider this necessary, for by applying this first coat of filler and baking it (we bake at 350° F. for 30 minutes) the same result is accomplished—with the added advantage that it is much easier to spot defects after a coat of paint has been applied.

The mist-coated casting, when baked, will show many blisters and bubbles which must be broken and hand puttied. These blisters are caused by the expansion of air and gases in the aluminum pores. By hand puttying these pores and other holes, which now show up clearly on the painted surface, the weak spots in the casting are effectively sealed. The putty we use is basically the same material as the filler.

The putty is allowed to dry as long as possible—overnight if practicable, especially if the humidity is high—and then it is baked lightly. This long air drying period allows the air entrapped with the putty to escape as well as allowing the solvents in the putty to evaporate completely. The puttied surfaces are then sanded with No. 100 or No. 2/0 sandpaper and the rest of the piece with No. 150 or No. 4/0 sandpaper.

Two Coats of Primer; Air Dry; Bake; Wet Sand

The next operation consists of spraying two coats of primer on the metal. The primer is a mixture of the original filler used in the first coat, and about 20% top coat enamel. The first coat is allowed to set thoroughly before the second coat is applied. The second coat is allowed to air dry for about an hour; then it is baked at 350° F. for 20 minutes. After baking, it is sanded with No. 220 wet-or-dry sandpaper, using water as sanding lubricant.

You will notice how we continually stress long air-drying periods—the purpose being, as always, to allow the gases to escape, and not to seal them in. If, in the operations just mentioned the gaseous elements were sealed in, the sanding would uncover these pockets which would then show up as tiny holes, usually invisible to the eye, and they would ultimately cause blisters.

Two Under Coats of Enamel; Bake; Wet Sand; Putty if . . .

The next operation is the application of two coats of topcoat enamel to be used as a sanding undercoat. For the undercoat we use a mixture of enamels which we no longer have use for (as top coats). Again the first coat is allowed to set before applying the second coat. A long air-drying period is not really necessary here because the enamel used has not as much body as the other undercoats and it air dries much more readily. It is then baked at 325° F. for 20 minutes.

The surface is then wet sanded with water and No. 400 wet-or-dry sandpaper. Any imperfections are puttied with a high grade lacquer putty and allowed to stand until the putty has dried very hard. If at this point there remains much

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puttying to be done, it may be concluded that there has been careless sanding or puttying somewhere along the line, or that the rule of long air-drying periods and light coats of paint has not been followed meticulously.

Actually, we rarely have to use lacquer putty. It has been our experience that the application of lacquer putty on anything but the tiniest of holes might result in a breakdown of the lacquer in the subsequent baking operation; a blister or a hole may show up where the putty was applied.

Two Top Coats; Air Dry; Bake 20 Minutes at 325° F.

The last operation is the spraying of the topcoat. Here the procedure is the same as with the sanding undercoat; two coats of enamel with an air-setting time in between and then a bake at 325° F. for 20 minutes.

It should be pointed out that the procedure outlined here is for the finishing of dental and medical equipment, which demands a durable glass-like finish. However, even for other work that does not demand such a high class finish, we still follow the same principles, namely, *plenty of air-drying time and not too much paint at any one spraying.*

Industrial Tape Corporation Appointments

Industrial Tape Corp., a subsidiary of Johnson & Johnson at New Brunswick, N.J., announces appointment of George A. Fitzgerald as Sales Manager of Automotive Products, and John L. Callahan as Merchandising Director. Mr. Fitzgerald has been with Industrial Tape since 1938, most recently as Division Manager in Los Angeles.

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specification finishes

Also

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. . . in gold, brass, copper and bronze, that only experienced eyes can distinguish from vital metals now in short supply or under restrictions—are the developments of Nikolas research. These popular items, in both air dry and baking formulations, meet virtually every need, for use on polished zinc or steel. For immedaite information on these materials, and their possible application to your products, write, wire or call. Phone Bellwood 320.

For Government Specification Finishes, we offer high quality, accurate formulations—dependable materials that are backed by years of experience in protective coatings manufacture during World Wars I and II, as well as during the peace-time years of the last half century.

Keeping abreast of Government requirements, we are in position to formulate and supply finishes for every coating need in the Defense program. Regardless of your problem, write, wire or phone us for immediate action!

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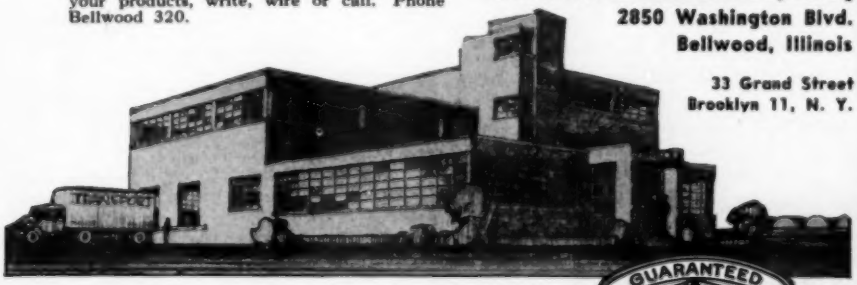

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Announcing
Binks NEW Model 29

the only low-cost spray gun with all these big gun features

light weight reduces fatigue Only 20 ounces! The Model 29 will be welcomed by everyone in your finishing department...for this bantam-weight reduces operator fatigue to the minimum.

cartridge-type air valve simplifies replacement The air valve and its seat (A) are quickly replaceable as a complete unit. No more time-consuming hand lapping of a new air valve into an old seat.

brass and steel material passage for longer life and better finishes Air-tight material passage (B) protects the aluminum casting from corrosion and erosion.

bottom air inlet for perfect balance (C) Distributes hose weight properly...makes it easier to manipulate the gun. (If desired, Model 29 can be furnished with the air inlet at the back of the gun (D)).

large air passages for low pressure drop Improves spraying efficiency...decreases load on compressor.

brass air nozzle for longer life and finer finishes (E) Drop forged for toughness, then machined to extremely close tolerances. Can be changed quickly for various set-ups.

PLUS **an attractive low price!**

SEND TODAY for Bulletin 29 which gives full information and prices on this remarkable new gun. No obligation.

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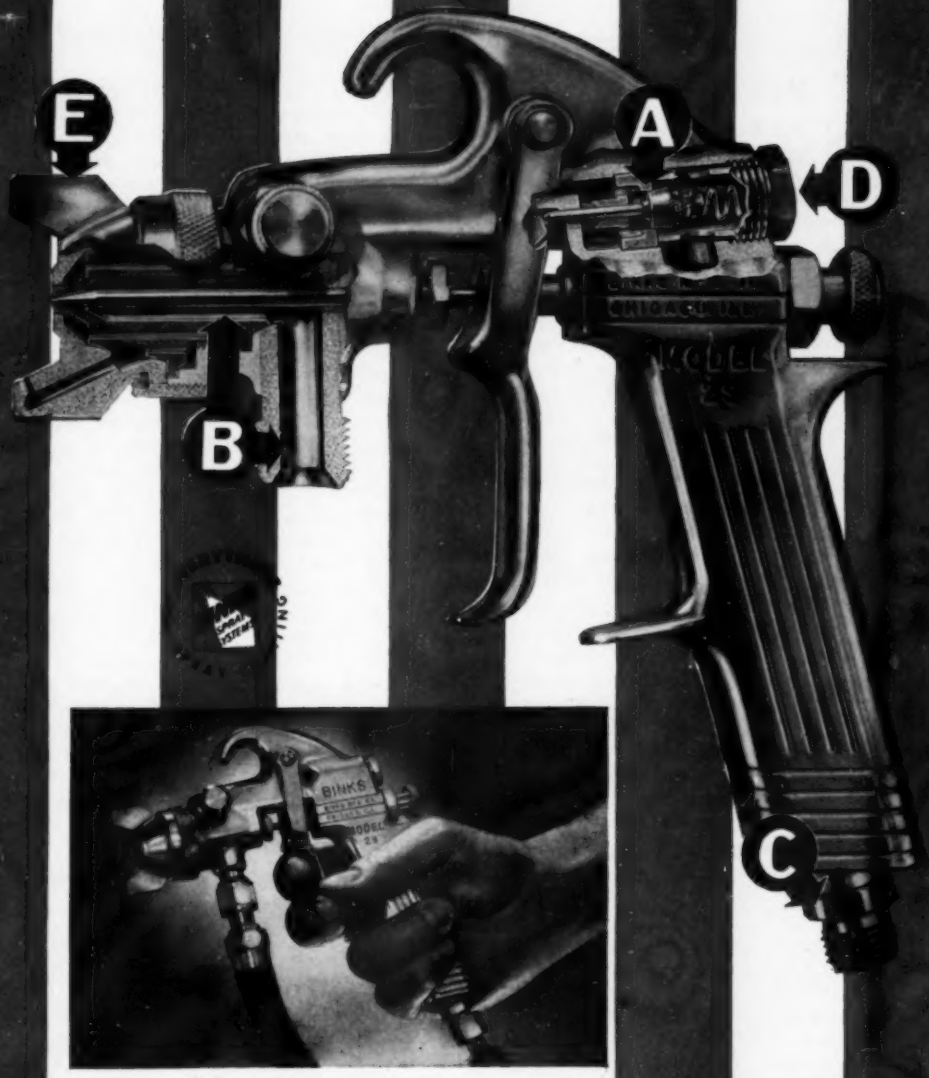

This compact, light-weight gun is designed to reduce fatigue without sacrificing the quality of the finish.

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Hot-Spray Lacquers

NITROCELLULOSE lacquers are stirring new interest as finishes for automobiles, furniture and other products, as a result of new hot-spraying techniques. Heating the lacquer before spraying reduces its viscosity, allows a higher solids content, and thus permits fewer coats, with attendant labor savings. Development of suitable heating equipment has advanced the art and shows promise for increased use of nitrocellulose lacquers.

If a lacquer is heated, its viscosity is reduced and a solution with up to 40% solids can be sprayed, giving a thicker coat. While this principle appears elementary, only recently has safe, practical heating equipment been developed and made available for general use.

Hot-spray lacquers now account for about 5% of the total volume of lacquers used, but growing interest and new installations of heaters point to an increase in this proportion.

Automobile manufacturers are testing the process and specifications have been prepared for its use in finishing parts of military aircraft.

Formulation of lacquers for hot-spraying requires changes in solids content and in the types of solvents. The price per gallon is perhaps 20% higher, since the solid ingredients are more expensive than the solvents, but this is offset by the greater thickness of the coating, which is increased some 40% to 55%. Less solvent to evaporate brings aobut an additional saving. When a typical 30% hot lacquer is used, 2.33-lbs. of volatile solvent are required to apply a pound of solids, but a 20%-solid normal lacquer would use 3.76-lbs. of solvent.

Many of the heaters developed for hot spraying of lacquer are being used with other types of finishes, including paints and synthetic resinous coatings. The same advantages of better covering and reduced viscosity, with less waste of thinner, are obtained with these materials, although the problem of applying more solids per coat is not so great here as with lacquers.—*Industrial Bulletin of Arthur D. Little, Inc.*

Strippable Coatings for . . .

INCREASED defense requirements, and the stepping up of aircraft procurement orders, have focused renewed interest in the use of strippable plastic coatings for protecting metal components from rust, corrosion or marring during fabrication, storing and shipping, according to Mr. B. F. Ames, General Sales Manager of Maas & Waldstein, Newark, N. J.

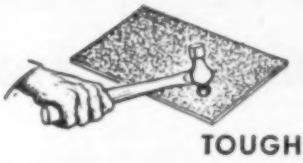
"Plastic coatings especially developed for the purpose are particularly well adapted to fill this need, since they can be applied by the spray or dip method, as well as by the hot melt process, depending on severity of requirements," Mr. Ames reported. "Many of these coatings will withstand stamping and forming, and all of them are readily removed merely by piercing and peeling."

Portable Electric Oven; Shelves

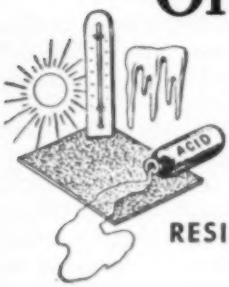
A new model portable electric oven with four shelves that provide for shelf processing has been added to its line by Grieve-Hendry Co., Inc., 1101 N. Paulina St., Chicago 22, Ill. The shelves have room for eight 2-in. deep by 12-in. wide by 23-in. long drying pans.

Metal to Get "Beauty Bath" Cleaning and Conditioning

A 4-page folder (8½x11-in.) explains and illustrates what Klem Kote is and how it is used for conditioning the surfaces of steel, iron and aluminum . . . how it cleans the metal and imparts a fine iridescent, crystalline, tightly adherent phosphate coating to the surfaces. This coating retards rust and provides a better bond for all industrial finishes. For a free copy of this bulletin, write Klem Chemicals, Inc., 14401 Lanson, Dearborn, Mich.



ZAPON Helps Solve Problems Of "Conformance"



DEFENSE ORDERS bring with them the need for conformance with government specifications. ZAPON can help.

ZAPON *Service From Every Angle* brings you finishes that meet government "specs" in the drum. They must comply with the "specs" to assure highest performance requirements in the field.

ZAPON technicians tackle any problem of "conformance" on your own production line. Let ZAPON help set up your finishing department to fill government orders with speed and economy.

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ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

Where Wood Finishing Has Been Improved . . .

By Joseph A. Hager
V. P. & Director of Sales
Grand Rapids Varnish Corp.

THE ART and science of wood finishing and the techniques therein employed have made remarkable advances during the past few years. Changes that have taken place in wood finishing can be divided into four categories:

1) Materials.
2) Equipment.
3) The philosophy and attitude of manufacturers using wood finishes, and
4) The requirements and demands of users of wood products.

Research has made available greatly improved and new types of pigments, and a more thorough and accurate understanding of behavior resulting from particle structure as well as composition. As a result, new formulations of pigmented materials possess increased opacity and better color. Chalking and fading can now be accurately controlled.

Natural and Improved Synthetic Resins

Resin chemistry has witnessed great expansion. Natural resins are being synthesized to impart desirable qualities not in the original resin. The field of synthetic resins has been constantly increased until today it appears possible to meet any specified requirement.

Of particular interest is the low-baking type of alkyd-urea-formaldehyde resin used in combination with organic acid catalysts to accelerate conversion of the film. This development has made possible synthetic coatings that have resistance to practically any and all use hazards.

Treated oils are making important contributions to finishing material qualities. Oils that once were considered as having limited application are being endowed by chemists with new and better qualities, all of which has helped the finishing material formulator.

Solvents; Cellulose; Plasticizers; Manufacturing

Solvents and solvent compositions have been studied and today there is a solvent available for practically every known need.

Nitro-cellulose and ethyl-cellulose have been steadily improved so that now they have greater uniformity, clarity and stability.

Many new, more efficient and more permanent plasticizers are available. Their effects on a wide variety of formulations have been

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Condensed from a paper entitled, "Advancements Achieved During the Past Decade in Wood Finishes", as presented by the author to the 11th Vermont Wood Products Conference at Norwich University, Northfield, Vermont, on May 24, 1951.

carefully studied and investigated. This new knowledge has been widely reflected in lacquer coatings.

While this work has been going on in the raw materials field, laboratories have kept pace in their research on formulations, manufacturing techniques and processes. Chemists are well equipped to make full use of the improved and new raw materials now available.

Improvements and refinements in machinery for compounding various products of the finishing material industry, together with a more comprehensive understanding of the behavior of raw materials in the manufacturing processes — these have contributed to product improvement and a reduction in costs.

The net result of these many improvements is that if you can write a detailed specification of your requirements the chances are that the industry can produce something to meet those requirements.

Better and Faster Finishes Demand Exacting Technique

While in many respects, present finishing materials are more foolproof in production use than ever before, it is equally true that as a result of their refinement and improvement, certain fundamentals have become more exacting and critical. It must be clear to everyone, for example, that as the required drying time of a product is reduced, say from 24 hours to 30 minutes, each one of these 30 minutes becomes more important and must be exactly the kind of a minute envisioned by the formulator.

Similarly, when one material is created to do the work that formerly required two separate materials or, when one coat of material achieves the results that formerly called for two coats, it is evident that greater care must be exercised in application and that drying conditions are more exacting.

What's Better About Present Day Materials

Generally speaking, the coatings now available to wood finishers are greatly improved over those offered a decade ago in the following properties:

1) Package stability.

2) Improved colors, opacity and permanence of color in pigmented coatings.

3) Clarity or absence of color in clear coatings.

4) Retention of or permanence of initial color in clear coatings in liquid and final film form.

5) Increased solids at spraying consistency, providing greater film thickness.

6) Better flow.

7) Shorter drying periods.

8) Improved compatibility with preceding and succeeding coats.

9) Suitableness for increased application speeds.

10) Adhesion.

11) Toughness.

12) Surface hardness.

13) More permanent luster.

14) Resistance to printing, staining and checking (both cold checking and inherent checking) and the other usual hazards of normal and intended uses.

Inasmuch as the most varied use of product finishes is made by the furniture industry, and since furniture finishing is still as much an

art as it is a science, thereby adding artistic requirements to protective and performance needs, most of the materials discussed in the following highlights of improvements, refinements and developments, will be those used principally by furniture manufacturers.

Wood preservatives provide protection not only against moisture, temperature and atmospheric changes, but also against rot and fungi deterioration where required.

Non-grain-raising stains, based on acid-type coal-tar dyes, carbitols and alcohol-type solvents, provide maximum depth, clarity, brilliance and permanence of color, with a drying speed measured in minutes rather than hours.

Stain-Filler and Stain-Sealer Combinations

Considerable progress has been made in combining materials to permit two operations being performed as one. One of the combinations achieved has been stains with fillers. It is now possible to produce reasonably deep wood colors, without a smeared or cloudy appearance, at the same time that wood pores are filled.

Also there is the combination of NGR stains with lacquer sealers to produce what is commonly called stain seals. These materials permit the production of good colors in all shade gradations at the same time that the wood surface is wash coated. This method is widely used where it is desired to have sharp definition between the color in the wood fiber and color in wood pores.

Research in filler formulations has been directed primarily to reducing the drying time required and to overcoming the tendency of fillers to turn gray. Result: Fillers are available that can be recoated in a matter of minutes, rather than hours. While all fillers that are offered are not free of graying characteristics, such fillers are available and their use is increasing.

A definite improvement in the wiping characteristics of fillers has made possible clearer and cleaner finishes.

Lacquer and Synthetic Wood Sealers; Glazes

Wood sealers are of two principal types—lacquer and synthetic. Developments and improvements in synthetic type sealers have been chiefly in the field of wood preservatives or the penetrating type of material; these have been covered under that heading.

In the field of lacquer sealers, the past decade has seen development of the so-called adhesive type of sealer, based on polyvinyl butyral resins. These sealers are characterized by low solids, but when used, they provide dramatic improvement in the adhesion and toughness of the wood finish.

Glazing sealers have been refined and improved so that they provide a more nearly perfect surface for glaze and its application.

There is improvement in the clarity of glazes, in their compatibility with succeeding coats and, through this improvement, reduction in the required drying time. Glazes formulated to meet special operating needs can be recoated in from five to ten minutes. A greater selection of colors is available too. [*To 62*]

COMPLETE FINISHING SYSTEMS

Up to 50% savings in labor costs are not uncommonly reported by furniture factories that have installed KOCH-DeBURGH "tailored to measure" Conveyorized Finishing Systems. (Patented)

● Whether your finishing department is large or small, a KOCH-DeBURGH Conveyorized Finishing System, *engineered to your requirements,* will give you increased production at lower cost. Write, wire or phone for details!

GEORGE KOCH SONS, INC.
EVANSVILLE, INDIANA

All lacquer sealers have been improved in their water-whiteness, retention of initial color, and in toughness and durability.

Lacquers; Water White High Solids; Heat

Great advances have been made in the quality of all lacquer coatings. Lacquers are available today which are water-white initially, and which retain that initial color both in the package and in the final film.

Properly formulated lacquers will resist the effects of sunlight, darkness, heat, humidity and age. Similarly, they are more highly resistant to liquor, boiling water, hot plates, mars, scratches and humidity. Certain lacquers can be sprayed at higher solids than ever before.

Greatly improved clarity and transparency have been achieved in flat, dull or rubbed-effect lacquers as a result of the development and use of silica aerogel as a flattening agent. Pigmented lacquers show improvement in opacity and resistance to chalking and fading.

The development of "hot lacquers"—lacquers for application at elevated temperatures—has excited wide interest and that promises a major saving to lacquer users. These lacquers, when used with proper equipment, permit the application of a single coating of sufficient thickness to produce the same results as are usually obtained with two coats of conventional cold spray lacquer. This makes possible a reduction in the time, labor, and floor space required for producing a given finish.

Thanks to advances in oil resin chemistry, the present oleo-resinous and synthetic pigmented coatings are adaptable to modern production methods and speeds. Their drying requirements are shortened; the quality of the film is improved and better fitted to meet exacting requirements.

Varnishes; Bleaches; Waxes; Polishes

In varnishes, a development that has created great interest is the alkyd-urea-formaldehyde resin type of baking varnish and the use therewith of organic acid catalysts such as normal butyl phosphoric acid to accelerate drying and conversion of the film.

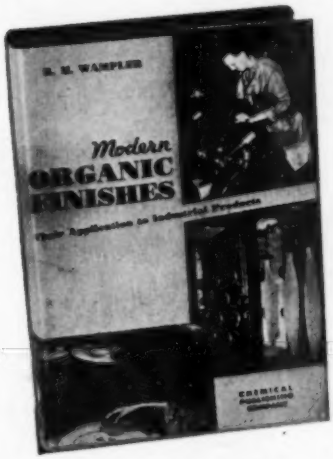
These coatings provide new standards of resistance to fingernail polish and remover, liquor, hot plates, boiling water and all of the other harmful effects of daily service. The use of these materials has been increased as a result of a reduction in the baking time.

Wood bleaches, which are still in great demand as a result of the popularity of light colored wood finishes, are used extensively. Improved techniques in using wood bleaches have been developed.

The chief improvements in waxes, as used by furniture concerns, is that their application has been made more simple, less laborious and less time-consuming, while their tendency to finger-mark and smear has been decreased.

The specific improvement in cleaning polishes has been in ease of application and permanence of results achieved. Polishes are available that quickly, easily and lastingly remove "bloom" or gray film, and produce good clarity. [*To 66*]

A "MUST" For All Finishers!



MODERN ORGANIC FINISHES

"Their application to Industrial Products"

This book contains 452 pages of the latest information on finishing. It describes modern finishing materials and equipment for their application, drying, conveying, etc., so that the reader may have an overall picture of modern industrial applications. Throughout, the main emphasis is on proper selection and use of materials to get the best possible finish at minimum cost.

It's Complete — Note the Contents

MATERIALS: Oleoresinous and Alkyd Varnishes and Enamels; Cellulose Lacquers; Spirit Varnishes, High Integrity and Specialty Finishes; Stains, Wood and Metal Fillers, and Miscellaneous Finishing Materials.

MODERN APPLICATION METHODS:

Spray Painting; Dipping and Flocoating; Roller and Knife Coating; Tumble and Centrifugal Finishing; Special Processes.

DRYING METHODS:

The Drying Process—Air Drying; Force Drying; Baking by Convection and Radiant Heat; High-Frequency Baking.

PRODUCT HANDLING IN THE FINISHING DEPARTMENT:

Conveying Methods.

FINISHING PROCESSES:

Wooden Furniture and Cabinet Finishing; Prefinishing Wood, Plywood and Hardboard Structural Materials; Special Industrial Wood Finishing Problems; Finishing Paper, Cardboard and Fabrics, Finishing Plastics and Resin-Impregnated Wood; Cleaning and Surface-Treating Metals; Finishing Automotive and Railway Equipment; Finishing Sheet Steel Products; Finishing Iron Castings; Finishing Aircraft; Rubbing and Polishing Organic Finishes.

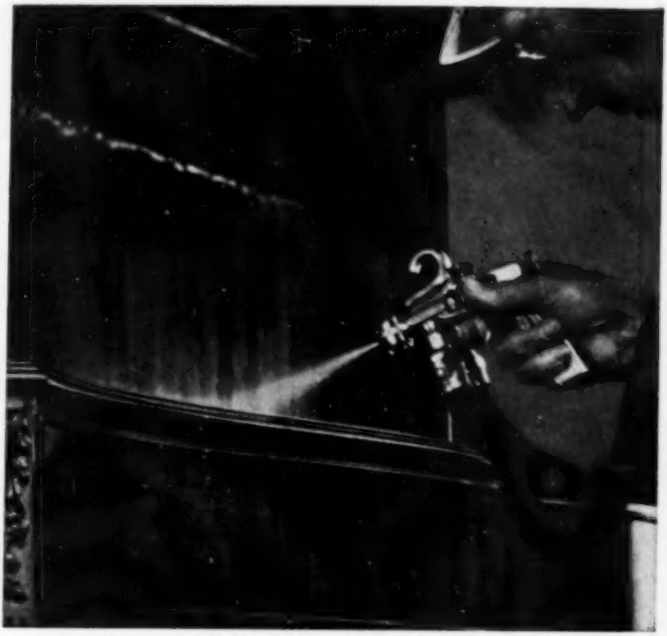
SOME GENERAL CONSIDERATIONS:

Good Practice in the Finishing Department; Testing and Evaluating Finishes.

The price is $8.50 and to eliminate bookkeeping we ask that cash accompany order. Sold on a money-back guarantee. Money refunded promptly and without any questions if you are not satisfied.

INDUSTRIAL FINISHING Magazine

1142 North Meridian Street **Indianapolis 4, Ind.**



ONE COAT OF HIGH-BUILD DULUX does the work of two coats of ordinary finish, leading furniture manufacturers report. And when only one spray operation is necessary, there's a 50% reduction in application time . . . and up to 30% reduction in finish-coat costs. Moreover, DULUX cuts drying time, storage space and rejects—other major items in figuring total end cost.

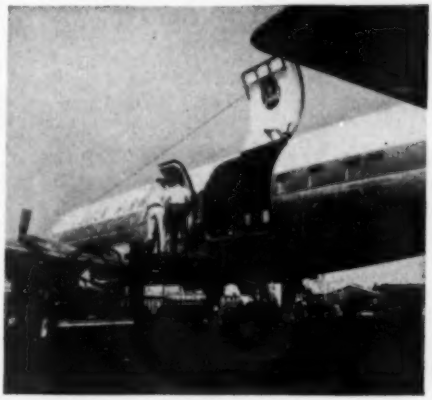
FURNITURE FINISH THAT GIVES SERVICE WITH A STYLE

DUCO-DULUX Furniture Finishes—typical of the 12,000 Du Pont-finish formulas working for industry today

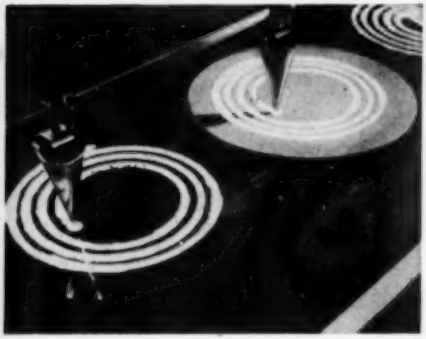
Du Pont DUCO and DULUX Furniture Finishes have helped sell literally millions of pieces of furniture at all price levels during the last ten years. Women know they can count on a Du Pont finish to stand up to marring, scratching, discoloration and printing . . . to keep its rich, satiny sheen for years and years.

That's why alert retailers point to the Du Pont finish to establish quality fast in a woman's mind. And furniture manufacturers know that a DUCO or DULUX finish will give a woman *lasting* satisfaction.

DUCO and DULUX Furniture Finishes are examples of the more than 12,000 Du Pont finishes that have been formulated for industry during the last twenty-five years. Among them may be a finish that can help you bring down your manufacturing or maintenance costs . . . enhance the durability, appearance and sales appeal of your product. Whatever your finishing problem, contact the Du Pont sales technician in your area . . . or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.



KEEPING AIR FREIGHT COOL! The white DULUX finish on the fuselage of this huge new DC-6A commercial cargo plane, in addition to being decorative and distinctive, is designed to reflect sunlight, and thereby keep cabin temperatures down for the protection of air freight. Trim and insignia were also done with DULUX in eye-catching red, white and blue.



SAND TRACKS MEASURE DRYING TIME! From small metal cones, sand drops on these slowly revolving test panels, leaving spiral-shaped tracks on the wet finish. After a set time, the Du Pont chemist stops each panel to determine point at which sand no longer adheres to test finish . . . thus he can measure drying time of any formulation with great accuracy.

SHOWROOM FINISH THAT CLINCHES SALES! Twenty-five years ago, a new Du Pont finish, DUCO, helped the automobile industry lick a bottleneck: it cut drying time from days to *hours*. Now vastly improved, DUCO is still the auto-industry favorite—for streamlined production, for showroom sales appeal, for lasting good looks on the road!

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

Spray Guns; Steam Spray; W. W. Booths; Pumps

Designers and builders of finishing room equipment have made important contributions to wood finishing progress. Spray guns are improved in design—have better balance, are lighter in weight and provide excellent atomization of all materials under maximum production speeds. Material and air adjustments have been simplified and made more certain and accurate in operation.

The steam spray gun, which uses super heated steam in place of compressed air as a carrying agent for the finishing material, is a comparatively new development. The idea of using steam as a replacement for compressed air is based on the fact that compressed air, when released at the gun nozzle, expands, whereas steam, when released, contracts. As a result of this basic law, savings are claimed for the steam spray method because it is said more of the paint sprayed from the gun nozzle is actually deposited on the work. The steam spray gun and equipment for producing super heated steam are in the testing period by industry.

Water-wash spray booths are extensively used, the users profiting thereby with cleaner work, fewer rejects, lessened fire hazard, lessened air pollution, and better public relations.

More companies are using improved drum pumps to withdraw finishing materials from shipping drums and deliver them to spray guns. These pumps not only supply the material to the spray gun at the required pressure but they also keep the material properly agitated or mixed.

The shop genius fixes up for his own comfort.

Material Heaters; Sanding; Rubbing

The development of a practical trouble-free and inexpensive heating unit for heating materials to be sprayed, is now well known to most users of finishing materials. Applying finishes at elevated temperatures reduces or eliminates the need of using solvents to thin the material for efficient spraying. This method permits and makes practical the application of increased thicknesses of film in one application. Since it provides uniform finishing material temperature, it assures more uniform production results.

There is much evidence to support the claim that the application of finishing materials at elevated temperatures produces important savings in time, finishing materials,

"TAILOR-MADE" FINISHES for your products

When finishes are "custom-built" by Reliance they fit better, wear better, look better and are more economical. Depend on Reliance for finishes that do specific jobs exceptionally well. Reliance has the laboratories, imagination, resourcefulness and experience — years of specializing in this field. May we suggest that you call on our technicians to analyze your needs. Reliance field service — is at your command.

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AFFILIATED FACTORIES IN

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RICHMOND, CAL. ARDMORE, PA.

floor space and labor. There is ample evidence, too, that in some instances this application method produces better looking finishes.

Better portable and stationary sanding and rubbing machines have provided finishers with valuable power tools, making it possible for them to do this once difficult hand work quickly and easily.

Conveyors; Drying Ovens; Humidity Control

The successful application of conveyor systems to the needs of the furniture factory, particularly in finishing operations, is an outstanding modern development. The economies of conveyorized production methods have long been recognized by the furniture industry, but the problems and peculiarities of furniture finishing have been so variable and so numerous that some manufacturers questioned the possibility of successfully fitting a conveyor to their needs. These problems have all been met and surmounted. In numerous factories conveyors are making efficient use of every square foot of floor space. They are so flexible as to permit the widest possible variation in finishing systems and methods, and in the size and shape of the items handled.

By utilizing drying ovens and humidity control systems, conveyors provide a uniformity of operating conditions that help to produce finishes of improved quality. At the same time production has been greatly increased and the cost thereof has been surprisingly reduced. Conveyorizing is almost a must for today's large volume furniture manufacturer.

"Hold it, Joe. Mr. Edwards is explaining our conveyor setup to visitors again."

Management's Attitude; Better Working Facilities

Perhaps the most notable of all advances during the past decade has been a change in the concept and attitude of factory managers and supervisory personnel. Where once they were content with the materials they were using and the way they were finishing, and were reluctant to change, now they are eager to learn about and try out whatever looks practical and promising.

There is an engineering approach now to finishing problems—a determination to make an idea that appears sound, work. No longer is anything taken for granted. No longer are past failures evidence that something cannot be done. This change is expressing itself in better training of employees. For example, forward looking manufac-

turers now make an engineering study of the proper way to spray a given product. Time studies are made and spray men are taught the most efficient sequence of movements to coat each type of product.

Recognition is being given to the desirability of uniform operating conditions and, as a result, temperature and humidity control are widely used and proper and sufficient air changes are provided in finishing rooms.

Another important result of this changed attitude is the finishing room controls that have been set up for materials. The required viscosity of materials is no longer guessed at; it is accurately measured and adjusted. Material temperatures are controlled; agitation is complete. These modern practices are contributing a great deal to improved quality finishes.

Furniture buyers are demanding depth, clarity and brilliance of color in clear wood finishes. They want color concept and finish design that rivals the artistry of museum and heritage pieces, in finishes that are equal to the hazards of modern day living and entertainment practices. They want finishes that are easily maintained and lastingly beautiful.

The result of all these things is that the finish on all furniture manufactured today is vastly improved in inherent quality and eye appeal. The same holds true of the finish on all other wood products.

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Gov't Specs. in Defense Product Painting

THE PAINT INDUSTRY has facilities that will help the prime or subcontractor who is planning to finish defense products according to government specifications. Before bidding on government work, the contractor should seek these facilities. They are available regardless of whether he has definitely selected his source of supply.

According to A. D. Duncan, V. P. of The Glidden Co., in charge of the paint and varnish division, the contractor should remember three important things in connection with defense finishing:

1) The finishing material he uses must conform with the government specification indicated in his contract.

2) It should function correctly and efficiently with the contractor's particular equipment.

3) The completed finish must pass government inspection.

"That problem is not as simple as it may sound," Mr. Duncan declares. "Government finish specifications rarely anticipate their use in high speed production. They are designed primarily to control quality of finishes that are applied under unhurried conditions by military personnel. Many government specifications include drying requirements of 24 to 48 hours, for example, or a slow bake. Drying is only one of a number of variables that require special consideration and treatment.

"During emergencies, industrial producers must apply coatings for the military with the particular equipment they have and must cure them rapidly with existing drying facilities, therefore, these coatings must often be specially tailor-made to meet each user's production requirements.

"Further complications arise from the fact that specifications for some finishes even define within narrow limits the permissible ingredients. Then it becomes a 3-way problem of formulating within those limits, conforming to the performance requirements, and producing a coating that will function with the contractor's equipment.

"Solutions to such problems require technical paint skills and experience of a high order which reputable and established members of the Paint Industry are accustomed to provide. These services include such elements as custom-building the coating and assisting on all problems involved in production finishing."

Duncan cautioned the contractor to avoid the mistake of simply buying so many gallons of paint at so much per gallon. Instead, he should save himself money and trouble by buying a coating that will permit him to produce rapidly, with his equipment, a finish which will pass government inspection. He will find that the government is exacting about its requirements and it has a precise system of inspection.

"The government itself learned during World War II the lesson of poor economy of placing contracts solely on the basis of price. In the present emergency, it is entering into negotiated contracts more than ever before. It is taking into consideration, in addition to price, such factors as the producers' facilities, abilities, and technical skills and experience to do a particular job in the best way. Paint buyers will be wise to keep similar considerations in mind.

"It is far better for the contractor to have his finish supplier select or develop a specific coating on which he can rely to conform with the government specification involved and also function correctly and efficiently with his present finishing equipment and procedures, before rather than after he bids on a government contract.

"If he must meet a nearby deadline in bidding, and does not have the opportunity to investigate his defense finishing problem thoroughly, he should allow himself a reasonable factor of safety in the cost per gallon of finishing material he uses in estimating his finishing costs. He may find that while the coating for which he obtained a quotation conforms to the government specification, it will not function with his equipment without considerable and careful modification.

"In planning to produce for defense, his greatest safeguard is to use the same care in selecting a source of supply for finishes as he does for his civilian coatings. He should expect and demand the same high caliber of technical assistance.

"The Paint Industry is ready and able to help him".

Wm. N. Kish Now Represents Filmwood in Midwest

Filmwood Corp., manufacturer of wood reproduction film, Camden, N. J., announces the appointment of Wm. N. Kish as its midwest service engineer. Mr. Kish is also the firm's sales representative in Ohio and Kentucky.

Mr. Kish has been connected with the Plastic Veneer Industry for the last 20 years, and is thoroughly familiar with the various phases of manufacture and application. He spends practically six weeks of the year at the Filmwood plant, keeping up with new developments and assisting in sales and service discussions.

Synthetic Rust Preventative

Petrobase 210, a synthetic rust preventive composition which imparts effective rust preventive properties to petroleum oils and waxes, is a recent development of Pennsylvania Refining Co., Butler, Pa.

S-Y TRADE MARK *Filler*

It's identified as Stille-Young Spee-D-Dry Filler—the original fast drying filler. Makes the perfect base for a lacquer, varnish or shellac finish. Easy to apply, easy to work. May be brushed, sprayed or dipped. Wipes off clean and sharp above the wood pores, producing a perfectly filled, clean, smooth surface—without streaks or cloudiness. Try it!

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to try the improved DETROIT HANDY "TAC" RAG on all surfaces before applying varnish, lacquer or synthetic enamel. They're non-inflammable at no extra cost, ready for instant use, never dry out or harden. *Standard* of your Finishing Industry for 17 years. Ask your supplier today or send for sample.

DETROIT HANDY "TAC" RAG

DETRO MFG. & SALES CO., INC., CULVER CITY, CALIF.

Chicago Furniture Show

New Style Trends, Materials, Finishes, Colors and decorative motifs observed in furniture presented at the American Furniture Mart in June, 1951.

THE 1951 Summer Market at American Furniture Mart set an all time high in the introduction of new styles, new lines and new designs . . . . industry leaders labelled the activity "cautious and selective."

Registered buyer attendance approximated 16,000, about 12% drop from a year ago. Mart officials, however, estimated that the same number of retail outlets was represented at the show; that several stores sent fewer buyers because of high inventories in certain lines.

Important "Name" Designers; Style Highlights

Good design and style in the medium and budget priced furniture was the biggest news of many seasons at the Mart. Famous-name designers' labels appeared on many lines brought out by manufacturers who previously were content with commercial furniture and the more grotesque modern.

Other major style notes that marked the Summer Market:

1) Development of American Provincial as a decided style trend.

2) Emphasis on informality and comfort, with recognition of American's leisure time needs.

3) Popularity of the so-called California style of furniture.

4) Introduction of tinted woods, such as Tropic Lime, Toasty Chestnut, Frosty Plum, Morocco Sand, and Silver-Fox.

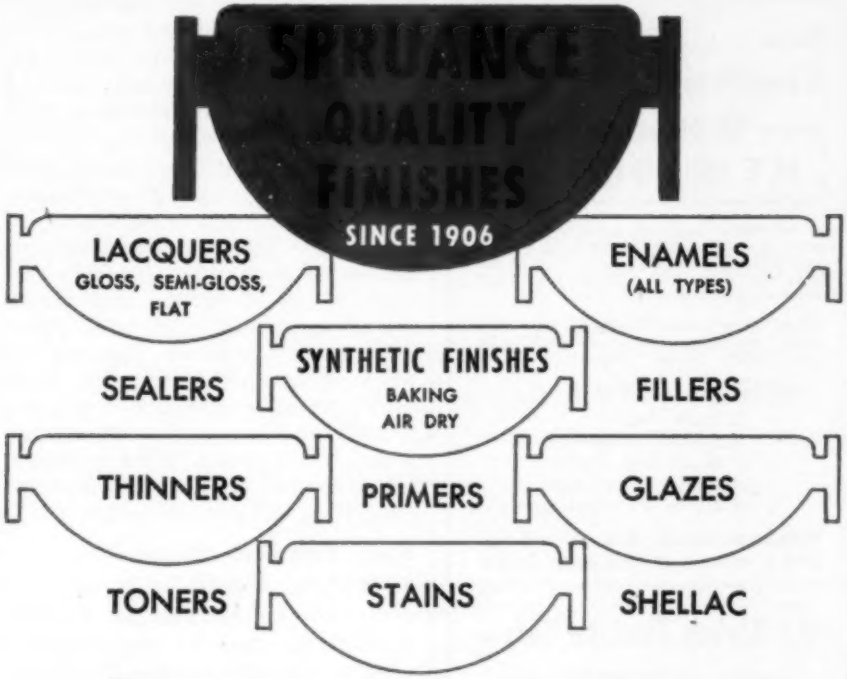
5) Plastic coatings and finishes in simulated wood grains.

For the first time complete lines of functional modern furniture of the type generally labelled "decorators' pieces" were available by several firms in the lower price ranges. Striking contemporary bedroom suites, as well as all living room furniture were featured. Designers emphasized that the new pieces would work out well, too, in a blending of traditional and modern.

Early Colonial furniture provided the inspiration for many of the details that have been blended with modern efficiency in the development of the popular American Provincial. Retaining the smooth lines and clean construction of modern, the new style has utilized Colonial inspirations for its decoration, hardware and contours.

Traditional; Modern; Indoor-Outdoor Pieces

The stiffness has been taken out of traditional and period, and the angularity and severity have been modified in modern to make both more comfortable . . . . Contour chairs remained popular, with scores



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WILKINSON'S NEW GLOSS is self lubricated. Now, even the novice repair man gets "master finisher" results.

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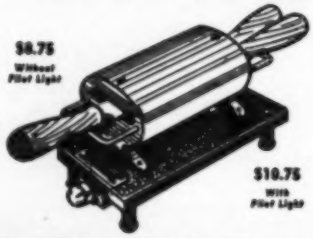

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of firms bringing out new adaptations. A marked trend was noted in lounging furniture for lawn and terrace that was adaptable for indoors—in recreation rooms as well as in the living room.

The open, one floor, indoor-outdoor style of living that originated in California, has resulted in a group of furniture especially designed for that style. Generally the work of top designers, and utilizing unique wood and fabrics, these lines of furniture are high-styled, but with marked informality. Low tables for beverages can be utilized for dining "en patio" with accompanying low stools. Even bedroom furniture felt the impact of bamboo applied in Chippendale motif.

Many Different Finishes; Variety of Colors

Greyed woods, antique finishes started the vogue for new wood finishes a few seasons ago. This trend reached full bloom in the Summer Market with pastels and tinted woods, and various textured finishes. Cherry and maple remained standard favorites, nudging mahogany and walnut for popularity. Silver-fox oak, greyed walnuts, limed oak, and bleached woods gave occasional tables an extra style lift.

Originally a novelty, plastic-coated woods, with remarkable stain

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DEPENDABLE INDUSTRIAL FINISHES

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- Clear lacquers
- Lacquer enamels
- Synthetic enamels
- Varnishes
- Specialties

Barrett Varnish Company

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CICERO 50, ILLINOIS

and wear resistant qualities, are becoming increasingly popular. The plastic finish adds a high luster to the pieces, yet retains the wood graining and coloring. Some firms introduced the plastic finish in ebony and ivory in color.

Novelty Design or Finish; Dressers; Beds

Almost every manufacturer has at least one new suite or one piece to sweeten up the line—a novelty of some kind, or a new treatment or finish that is "irresistible". There's a service wagon on wheels which opens to a full-size dining table; a cocktail table that adjusts to dining table height; a chest that becomes a desk or an extension table; a breakfront that serves as a chest, a storage unit or a desk; small chests that lengthen a dresser when placed on either side of it, or can be used separately.

Dressers now come "family style" with up to 12 drawers aboard. Even the single dressers look more commodious, the doubles have as much storage room as a small closet, and the triples accommodate just about every personal thing that belongs in a bedroom. Design and construction give the dealer a wide range with which to meet the demand from both large and small homes.

Another space-saver, multiple-function unit that vies with the super dresser for attention is the bookcase headboard, which also goes under the name of bar bed, studio headboard, penthouse headboard.

Stylewise, there are more serpentine fronts, more flairs and curves

EXTRA QUALITY EXTRA COVERAGE
EXTRA BEAUTY . . . AT NO EXTRA COST!

Only New Period Production Finishes give you all the extras . . . at no extra cost. But see for yourself—try a 5 gallon working sample at drum price.

- Fillers and Stains
- Lacquers—Clear and Semi-Gloss
- Sealers
- Lacquer Enamels—Flat and Gloss
- Synthetic Enamels

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NEW PERIOD Production Finishes

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Serving THE SOUTHEAST

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- SEALERS
- FILLERS
- TONERS
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- PIGMENTED WIPING STAINS
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Manufacturers of Quality INDUSTRIAL LACQUERS
P. O. BOX 548 — TOCCOA, GEORGIA

to relieve austerity and give a sweep and zip to what might otherwise be boxiness. Pull-less cases are almost as numerous as those with hardware. Walnut and oak are favored woods and mahogany is no longer strictly 18th century; it has gone modern in a rich and streamlined way in several of the lines. Other woods, such as Korina and avodire, are much in evidence, and maple and cherry are no more the exclusive property of colonial patterns.

Woods in Tan, Beige, Warm Brown, Gray

Finishes follow the trend of upholstered goods to "earthy" or muted shades of former popular harsh colors. Thus, woods are tan or beige or warm browns, with gray still prominent but not dominant.

The "earthy" colors have really taken over, and almost every line had at least one or two of the No. 1 shades: Cocoa, beige, lime, olive green, chartreuse, persimmon, nutmeg, cinnamon, copper or coral. Nor are these colors peculiar to modern styles. Traditional blossoms

out in them just as freely, though of course modern designs far outnumber traditional.

Sectionals, which were sensational when they first came in, and then tapered off in popularity as the novelty wore off, have surged back again in the biggest, most diversified range. They are stylish-looking, functional and attractive.

Juvenile Furniture; Durable Attractive Finishes

Progress in design, flexibility, size and general appearance is the keynote of juvenile furniture shown at the Summer Market introductions. Chifforobes are varied sizes with added drawer space and double paneled drawers for a more uniform look. Cribs are taking on a more stylized sight with solid panels and a more solid look.

Highly ornamental decals are used in smaller quantities. A new finish, shown under various names in many lines, is chip-proof, washable, textured, and very attractive. It is said to be the most practical ever introduced to the juvenile field.

Decoration, always a focal point in this field, is less emphatic and often subordinate color, finish and graining of the wood. Hand painted designs are replacing decals in many numbers. A variety of Western influenced sets in maple use carved trim.

A contemporary trend is apparent in the modern styling of some simple juvenile units which depend on finish and design for their decorative motifs.

Materials used in the production of occasional furniture have been expanded to include cork, wicker,

Finco

COMBINATION STAIN - FILLER

New—Different—Unusual

This new combination stain-filler cuts finishing time 33 1/3%. Wipes easy—can't turn gray—won't fade, won't shrink. Investigate today!

FINISHING PRODUCTS CO.
3725 East 13th Street
Indianapolis 1, Indiana
Mfrs. of stains—fillers—sealers—lacquers since 1920

Spe-de-way

WOOD BLEACH

This single operation, controllable, Patented Bleach

- **Requires No Neutralization**
- **Does Not Raise the Grain**
- **Leaves No Deposit**
- **Wood Is Left Neutral**
- **Economical . . . Dependable**

Gallon Unit makes two gallons of bleaching solution. Application by spray or synthetic rubber sponge. Wood is ready for finishing in less than two hours.

Delivered prices quoted on request.

Spe-de-way **Products Co.**
manufacturers
3639 N. Columbia Blvd., Portland, Ore.

steel, wrought iron, and plastic. New woods introduced at this market include elm and ash, but there is new variety in walnut, mahogany, oak, birch, maple, knotty pine and cherry.

Contemporary free-form tables have become a part of many lines in all price ranges. Characteristic of this field is the modern abstract shape, but dark and light woods, leather, and glass have been used generously so that the contour is the only consistent point.

Spacious drawers, compartment, and open book sections have become design features of a multitude of lines. Angular, rolled, and squared legs are crowding the squat, close to the ground legs used extensively in modern design.

Excerpts from a news release sent out by the American Furniture Mart, 666 Lakeshore Drive, Chicago, Illinois.

Everyone Work Safely

MANAGEMENT of a manufacturing plant became greatly concerned about an unfavorable injury experience to employees over recent years. The frequency rate had continued to follow an upward trend, even though it was known that the injuries could have been and should have been prevented by training employees to work safely, to recognize unsafe practices and conditions, and to accept a share of responsibility for their own safety.

This situation also focused attention on the fact that active, alert, and aware supervision from top management to foreman or group leader is a vital factor in carrying out the safety program.

During a safety and fire protection survey of the firm's operations, 27 unsafe practices were found. They ranged from lack of eye protection, working from a precarious footing, entering roped-off areas, and lack of respiratory protection to improper use of flammable liquids.

Well established electrical standards were not being followed, particularly where temporary work had been done.

In several locations guards were either not in place or not provided.

Housekeeping was poor and substandard conditions were in evidence throghout three of the operating areas.

Many of the injuries that had occurred to employees at this plant during the past 15 months had been the result of violations of safety rules and safe working technique.

After analyzing conditions and trends, management realized that it must establish a firmer policy regarding violation of established safe working procedures, and that supervision must be better trained to detect these unsafe practices and see that all employees accept a share of responsibility for their own safety.

Immediate steps were taken to correct the conditions just outlined and next year should show a tremendous improvement.

A larger plant than this one found itself in the same predicament a few years ago and now it enjoys a fine safety performance. Its management learned that everyone must realize that *it is not necessary for any job to be done unsafely.* It is a company policy to carry out operations safely.

Training programs were initated, good housekeeping was stressed, a safety violation program was effecuated, safe methods of operation were developed, and each area's safety program was reviewed by supervision before the central safety committee.—*Chemical Safety.*

where heat is a problem

united's C5173

THE NEW ONE-COAT, HEAT-RESISTANT LACQUER

Wherever high heat creates a finishing problem, you can look to United's new one-coat, heat-resistant lacquer C 5173 for a speedy solution.

C 5173 will give your products a tough, durable finish which will retain its color without cracking or peeling at temperatures up to 300 degrees F. Applied by spraying C 5173 has excellent adhesion to all metals, including steel and aluminum. It air dries in 15 minutes and can be handled in 20 minutes.

C 5173 is available in all colors, in flats, semi-gloss, and gloss. Make your own tests with C 5173—a working sample will be sent on request.

Complete Research Facilities
AT YOUR SERVICE

If you are faced with a special finishing problem, the United laboratory will gladly assist in finding a solution. These research facilities are always at your service to help make a better product.

PAINTS • SYNTHETICS
UNITED
LACQUERS • ENAMELS

United LACQUER MFG. CORP.
LINDEN, N. J. EVERETT 52, MASS.
PHILADELPHIA 19, PA.

INCREASE PRODUCTION—
DECREASE LABOR COST

with a

DeBURGH CONVEYOR

IMPROVE QUALITY—Every installation is "TAILORED" for the production.

NO LIFTING OR PUSHING of tons of merchandise by operators

GREATER FLEXIBILITY especially for handling various sizes of products.

PRODUCTION CONTROL determines exact production per hour.

ELIMINATES damage and breakage.

COSTS LESS

than any conveyor with same capacity.

Investigate!

DeBurgh Conveyors

Patented and Patents Pending

For Assembly, Finishing and Upholstery

1741 K St., N. W., Washington 6, D. C.

Entrancing

● Highlight your product with an alluring finish . . . for as the finish is the final step in production, it is the first step toward sales. Our competent staff of artists will carefully analyze your finishing needs with a constructive, critical viewpoint — will then prepare a sample coating that best fits your purpose. Our Creative Studio is ready to serve. We invite you to take advantage of our service at no cost or obligation.

No Tampering with Quality

ROCKFORD VARNISH *Company*
ROCKFORD ILLINOIS

Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

Blonde, Lime Finishes

We need general information on materials and procedures for blond, lime and other off-color finishes. Can you tell us a source for obtaining the information?—*W. Fixture Co.*

In a letter we are sending you names and addresses of manufacturers who supply materials for this type of finishing.—*Editor.*

Wood Crack Filler

Please send us the names of firms that supply crack filler suitable for filling seams on wooden crosses, which are eventually finished with lacquer. The crosses are made of birch and walnut. The filler we are now using appears to dry out and crack at the joints, causing the lacquer finish to crack.—*C.C.*

Information supplied.—*Editor.*

Where's Divco Corp.?

In the May issue of Industrial Finishing, we noticed an article on "Cleaning and Painting House-to-House Delivery Trucks" (beginning on page 68). We are interested and would appreciate knowing the location of this plant which we assume is the Divco Corp.—*P.S.Co.*

The address is 22000 Hoover Road, Detroit 5, Mich.—*Editor.*

Air Dry Wrinkle

The March 1951 issue, on page 94, under the title, "Air Dry Wrinkle", shows an interesting item and we would be pleased if you would submit to us the names and addresses of the three firms mentioned.—*W.D.Co.*

Write "New Wrinkle" about this. Their address is 1819 Bankers Trust Bldg., Chicago 3, Ill.—*Editor.*

We Have "Zincote"

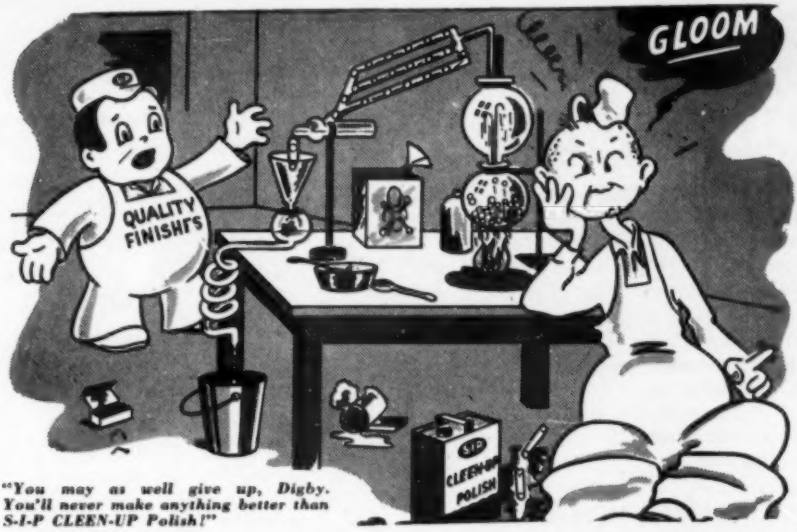
On page 86 of June issue, we notice that someone is looking for "Zincilate". We don't make "Zincilate", but we make "Zincote" which we think is better. Perhaps the concern that is seeking said information would be interested in our product.—*Connersville Paint & Supply Co., Inc.*

Maybe so. In a letter we are sending you their name and address.—*Editor.*

Finishing Military Aircraft

We would like to obtain a few reprints of the article, "Finishing Military Aircraft", by Gilbert Close, Parts I, II and III, which appeared in the January, February and March issues of Industrial Finishing. Please let us know of the availability of reprints or tear sheets; also price per copy.—*M. Aircraft Corp.*

Reprints cost money and occupy space. We didn't have any made of



"You may as well give up, Digby. You'll never make anything better than S-I-P CLEEN-UP Polish!"

LABORATORY CONTROLLED, FULLY GUARANTEED

S-I-P Cleen-Up Polish

It goes farther . . . works easier . . . improves the appearance and sales appeal of any finish. Just "wipe it on and wipe it off." It whisks away dust and lint—removes finger prints and rubbing compound.

S-I-P CLEEN-UP Polish is made and guaranteed by the makers of the popular WEAR MASTER Finishes.

You can TRY IT FREE—just clip and mail the coupon.

STANDARD INDUSTRIAL PRODUCTS, INC.

FREE TRIAL
S-I-P CLEEN-UP POLISH

Just clip this coupon to your letterhead and mail it to us for a generous free sample of S-I-P CLEEN-UP POLISH. No obligation.

STANDARD INDUSTRIAL PRODUCTS
Evansville 4, Indiana

EVANSVILLE 4, INDIANA

Makers of the Genuine "WEAR MASTER"
STAINS, LACQUER SEALERS & CLEAR LACQUERS

this article. However we happen to have a few extra copies of those issues and are sending you a set.—*Editor.*

Christmas Tree Ornaments

We are interested in the materials and methods necessary for coating Christmas tree ornaments and would appreciate it if you would send us any information you have.—*D. J. Co.*

We haven't published anything about these items recently. In a letter we are naming a few concerns that may be in position to supply the finishing materials you need.—*Editor.*

Metal Wall Tile

In the March 1950 issue, beginning on page 28, we see an article on finishing metal wall tile, written by the superintendent of Cadillac Mfg. Co. Would you be good enough to send us the address of this company? —*E. C. Tileboard Corp.*

It's Mt. Clemmons, Mich.—*Editor.*

Flow Coating Equipment

We are interested in obtaining a list of manufacturers that are furnishing the finishing trade any and all types of Flow Coating equipment. We have an urgent project requiring such equipment.—*G. P. Co.*

Information supplied.—*Editor.*

Quick Air-Dry Enamel

We are interested in a quick, air-drying enamel or lacquer that can be used on a line of children's stools made from fir plywood and pine. The finish will involve the spraying of a ground coat and the brushing of details. High luster is desirable. We would like to get this with one coat if possible, or with a dip sealer and one coat.—*B. Products Co.*

Several concerns that advertise in I. F. can supply what you need. In a letter we are naming some of those nearest you.—*Editor.*

Bronzing Powders

We would appreciate the names of manufacturers of bronzing powders made in fluorescent colors, as mentioned in January 1951 issue, on page 119.—*M. P. Co.*

Names given by letter.—*Editor.*

Induction Heating to Bake Finish

We are interested in attempting to bake roller-coated enamel on sheet steel by means of induction heating, If you know of any concerns that are using induction heat to bake paint in a regular production setup, we would be interested in learning their names so we could contact them.—*K.E.Co.*

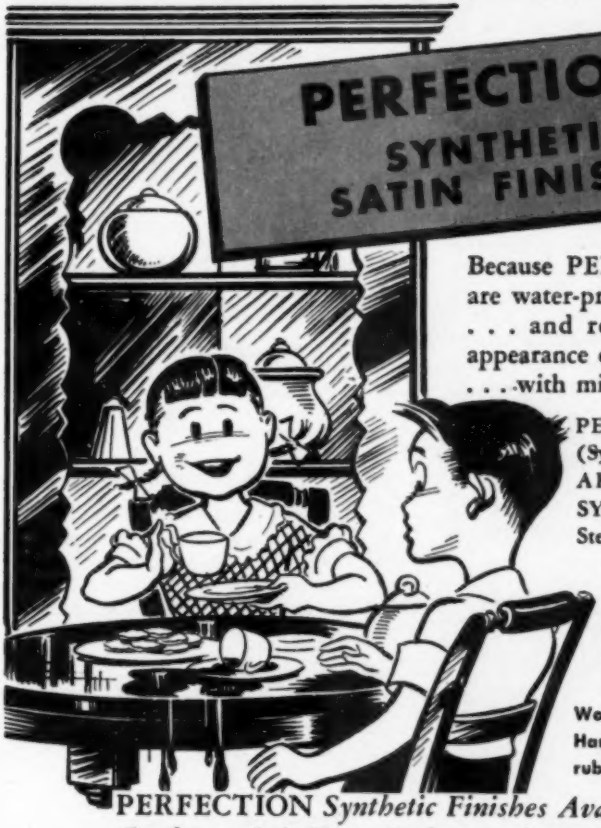
Can some reader tell us anything about induction heating or what concerns may be using it for the purpose suggested above?—*Editor.*

Hard Hammer Finishes

We are trying to locate a source of enamels which are as hard as porcelain, especially in the Hammer Finishes. The products we plan to use this finish on are window and attic fans, refrigerators, stoves, furniture, ash trays, etc. We require a

Mamas DON'T WORRY

WHEN FURNITURE IS FINISHED WITH



Because PERFECTION finishes are water-proof . . . liquor-proof . . . and retain that beautiful appearance of hand-rubbed finish . . . with minimum care.

PERFECTION FINISHES (Synthetic or Lacquer Type) ARE FLATTENED BY SYNTHESIS rather than by Stearate or Other Foreign Flattening Agents.

Clarity of Gloss Lacquer even in lower sheens • Will either gloss or dull rub • Won't haze or sweat back • Has that rubbed effect without rubbing • Has a waxed feel.

PERFECTION *Synthetic Finishes Available in Grades to Suit Your Budget and Drying Time.*

PERFECTION PAINT & COLOR COMPANY

715 E. Maryland St., Indianapolis 2, Indiana

finish as hard as glass. Will you please refer us to several sources where we might be able to obtain such enamels?—*T.Mfg.Co.*

In a letter we are giving you the names and addresses of several concerns, any one of which should be in position to supply what you want.—*Editor.*

Felt Polishing Pads

We need information leading to the purchase of felt polishing pads for use on rotary polishing wheels. The regular VanDorn pad is too dense and hard, and that firm doesn't make any other grade at this time. We noticed an article in a recent issue of this publication on the above subject, and signed by Felt Association.—*L. Casket Co.*

In a letter we are naming a few sources of supply for felt polishing pads.

The address of The Felt Association is 480 Lexington Ave., New York 17, N.Y.—*Editor.*

For Plaster Ornaments

We have seen from time to time the question asked in Industrial Finishing magazine, "Where to get a good finish for plaster ornaments?". One company wrote in stating they could supply finishes for this purpose, but we cannot now locate the copy in which this information appeared.

We want a good filler or size, color and a finish glaze or clear coat to make the plaster surfaces look as near like china as possible.—*N.S.Co.*

Who can supply such materials? We have on our reference card the names of only two concerns. There must be many more.—*Editor.*

"Did you thank Ed for letting us use this tumbler to mix a few drinks for the company party to-nite?"

Flock Finishing

I am using flock with a moderate degree of success, and have been advised that you could direct me to a book which would be helpful along this line. I am also handicapped as to where to purchase the supplies.—*C.A.*

We know of no book on the subject but, in a letter, we are naming concerns that make and supply flock, etc. —*Editor.*

Tumbling Equipment

We would appreciate receiving a list of manufacturers of tumbling equipment suitable for finishing small metal and wood parts. It would be convenient if this list included those manufacturers within the New York or local area.—*L.I.*

Sources of supply given.—*Ed.*

Lacquers · Sealers

Lacquers and Sealers in a wide variety of specifications. High or low solids. Glossy or flattened. For hot or cold spraying, for dipping or for special application methods. Tested for durability.

●

STAINS

GLAZES

FILLERS

SHELLAC

ENAMELS

UNDERCOATS

SPECIALTY FINISHES

●

IN STEP WITH THE TIMES

JAMES B. DAY & CO.

CHICAGO 14

Why Does Roller Coater Make "Repeat" Marks

We operate a custom finishing shop, therefore the products we finish are not standard in kind of material or in size or shape of object. Most of the cut sheet metal stock that we have roller coated has been in fairly short lengths and we had no difficulty with "repeat" marks extending across the width of the finished sheet.

Recently, however, we accepted a job of coating sheets 6-ft. long by 28-in. wide. When these sheets are run through the roller coater there is a "repeat" mark, or what appears to be a heavier concentration of enamel that forms a line across the 28-in. width at every complete revolution of the roller.

Do you know of any method by which this mark can be prevented? A prompt answer will be appreciated, as we have stopped work on this job because the finish is unacceptable, as applied in our roller coater.—*J.V.Co.*

First, let me ask this: Is your applicator roll perfectly smooth and round? Not even slightly indented or flattened from previous service or storage?

There are two methods of preventing those "repeat" marks that the applicator roll of a roller coater leaves on flat sheet stock. First, use an applicator roll large enough around to equal or exceed the length of the cut lengths of sheet stock to be coated. Then one revolution of the applicator roller will completely coat the entire sheet of stock.

However, in your case, operating a custom finishing shop with no standardized product, it would probably be impractical to stock applicator rolls large enough in diameter to accommodate any cut lengths of sheet stock that you might have to coat. I suggest that you mount a small-diameter idler roller to roll in contact with the plicator roll, and slightly above its above the outfeeding side of the applicator roll, and slightly above its horizontal center.

This rubber idler roll will rotate from contact with the applicator roll. Its contact rotation has a tendency to smooth out any material that may remain on the applicator roller (after contact with the stock). This arrangement will usually prevent the "repeat" marks from showing up on long length sheet stock.—*W. B.*

Bleaching Technique

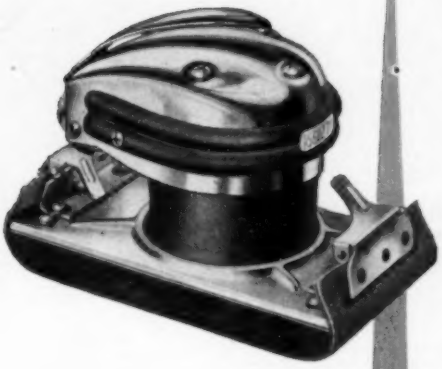
In the Questions and Answers for May issue, on page 104, under the title, "Our Plywood Warps", we notice a request from a reader for information regarding a change of procedure which will prevent warping due to their present bleaching process.

We read with particular interest the recommendation you have made to these people regarding the wetting of opposite side. We do not agree with you in this recommendation. Their process can easily be altered to where this problem will be entirely eliminated.

The fact that they are bleaching mahogany face veneer and are three days in the process, clearly indicates

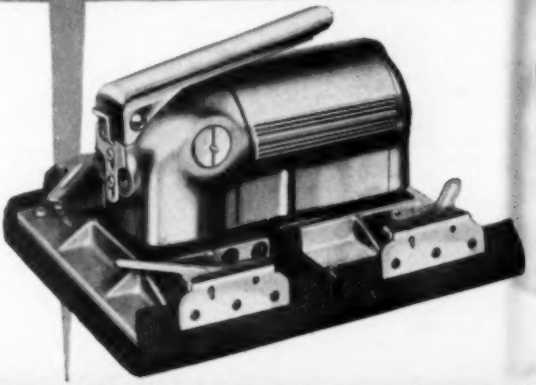
National Sanders

STRAIGHT-LINE *or* ORBITAL ACTION



National offers either orbital or straight-line action in its line of light-weight, fast, portable air sanders. Orbital action for speed and longer abrasive life . . . straight-line action for applying pattern or conforming to grain. No matter what type of sanding is most satisfactory for your needs, be sure and see your National Sander distributor. He is able to advise you impartially as to the machine that will best fill your requirements. Write the factory for details.

- *Light-weight*
- *Powerful*
- *Vibrationless*



NATIONAL NS SANDERS

NATIONAL AIR SANDER, INC.

2820 AUBURN STREET, ROCKFORD, ILLINOIS

to us that they are using the wrong bleach and that this bleach requires neutralization. The follow-up flushing with water is wetting the wood so much that warping results.

We are sending you three pieces of three different types of mahogany which have been given a single application of our wood bleach with a synthetic sponge. A second application, applied 20 minutes after the first, would remove still more color if it were found necessary or desirable.

Due to the fact that our bleach requires no neutralization and that the surface of the veneer is thoroughly wetted but not flooded, all danger of warping is removed, even when the veneer itself is bleached. Application may also be made by spray.

We believe that the G.L.Co. will appreciate your forwarding these samples and information contained herein to them.—*Spe-de-Way Products Co.*

Four Technicians Join Staff of Atlas Powder, Finishes Division

Four new technicians have recently joined the sales service staff of the Atlas Powder Co.'s industrial finishes laboratories at North Chicago, Ill., enabling the laboratory to augment its services to industrial finish customers.

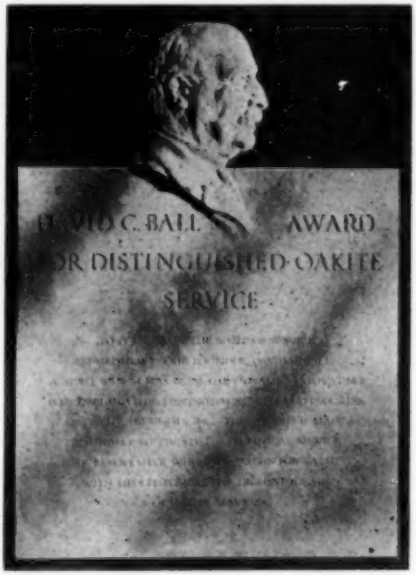
Mr. Alex Andreoni, a graduate of the University of Illinois, has joined Atlas after several years with a paint company in Chicago. He is a specialist in the formulation of wrinkle, hammer and other specialty types of finishes.

Mr. Lester H. Zander comes to Atlas from another manufacturer of finishing materials. Mr. Zander attended Michigan State College and Detroit Institute of Technology and has specialized in the development of automotive baking synthetics.

Mr. Robert S. Spiegel, who will serve the Atlas laboratories as an evaluation and physical testing chemist, comes to Atlas from a large and well known manufacturer of finishing materials. He majored in chemistry at the University of Illinois and has done graduate work at the University of Minnesota. Mr. Glenn Creath, who specialized in synthetic automotive enamel work and technical developments in the synthetic finishes field with another manufacturer for several years, has also joined the Atlas technical service staff. He is a groduate of the University of Illinois and Northwestern University.

Oakite Establishes Award for Service to Industry

John A. Carter, President of Oakite Products, Inc., manufacturer of industrial cleaning and related materials, has announced the establishment by the Company of the David C. Ball Award for Distinguished Service. It is a bronze plaque to be presented annually to the member of the Oakite technical field organization who has rendered the most outstanding service to industry during the year.



The award is designed to perpetuate the memory of David Clifton Ball, pioneer in industrial cleaning procedures, founder of the Company and Chairman of its Board of Directors at the time of his death in March of this year. From the earliest beginnings of the Oakite organization in 1909, Mr. Ball insisted upon maintaining the principles of service which today characterize the work of the Company's field service organization.

"The Oakite technical service representative who wins this award," Mr. Carter states, "will have demonstrated exceptional ability to search out and set up improved methods that will cut cleaning costs and provide superior results. . . will have consistently made certain that his customers shared his know-how in using the correct material to best advantage . . . will have reported on his work in full, so that his fellow representatives might benefit from his experience.

LANLY "BUILT-IN" *Heating Systems*

for Compact Streamlined Continuous Finishing Ovens

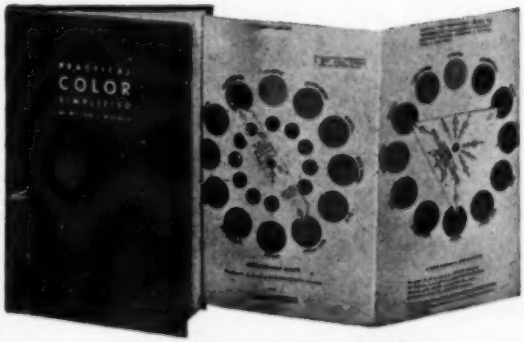
FIRST, Get a LANLY Proposal

Write for Catalog

THE LANLY CO.
OVENS FOR INDUSTRY
HEATED BY GAS, OIL, ELECTRICITY OR STEAM

360 PROSPECT AVENUE, CLEVELAND, OHIO

PRACTICAL COLOR SIMPLIFIED



A Handbook for everyone interested in or using Color. Contains many Tables, Color Plates and the Miskella Patented Color Chart. Just revised and reissued in a Limited Edition after many urgent requests from among 5000 users of previous editions in all parts of the world. Answers those vexing color questions which come up every day—the little technical puzzlers that bother. Contains a wealth of valuable information written in understandable form so all may understand.

The Patented Miskella Color Chart enables you to mechanically select colors, mix shades and tints, harmonize three or more colors and avoid color discords. Securely fastened in back of book. Colors are hand applied with lacquer on cloth not easily damaged by frequent handling. On it are mounted, pivoted celluloid arrow and triangle. This Chart is worth alone the price of the entire book!

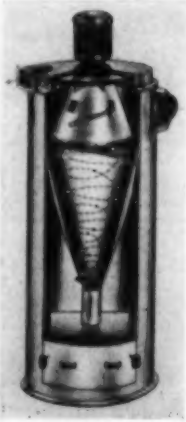
128 Pages. Price $5.00

INDUSTRIAL FINISHING, 1142 N. Meridian, Indianapolis 4, Ind.

Materials Supplies Equipment

Unit Dust Controller

The Day Co., 810 Third Ave., N.E., Minneapolis 13, Minn., announces a new unit dust controller designed to operate as an independent unit and provide maximum dust recovery over a wide range of volume at low operating cost. These new units are desirable and practical in plants where central dust control systems are not feasible; also, they will solve the dust problem at dust points too far removed from a plant's central dust control system.



Dust-laden air enters at the side of the unit and spirals smoothly down to the cone outlet. As cleaned air spirals up through the internal skimmer stack, most extra fine dust particles, carried upward with the outgoing air, are concentrated by the tapered stack. Here they are skimmed off and returned to the dust outlet.

The smooth, continuous streamline air travel from inlet to outlet eliminates eddy currents and back pressures caused by changes in air flow direction. Units are available in four sizes with or without secondary filters.

Automatic Mask Spray Painting Machine

The new 2-station, 2-color spray painting machine illustrated here mechanically and automatically applies paint finishes as decorative designs to metal stampings, plastic products, die castings and similar products at production line speed.

Such pieces as decorative nameplates, escutcheons, counter displays and others that are to be finished in more than one color, even though one of the colors is a very simple operation and the others involve intricate angles, depressions or raised portions that have to be covered uniformly, are handled with equal ease and at the same speed of production by this machine. *(Continued on page 94)*

Automatic 2-color masked spray painting of a variety of products at fast speed.

BOXBOARD,
Surfaced with Colored
CLAREMONT FLOCK
forms slotted racks and plush background for
VACO SCREW DRIVER GIFT SET

This application is interesting from a packaging, as well as an industrial viewpoint. Functionally, the die-cut platform holds all five screw drivers in trued position—while the Claremont Flocked surface of the board safeguards the plastic handles from being scratched.

Claremont Flocked boxboards—in a complete range of colors—are available from leading paper merchants. For industrial spraying purposes, and in eighteen colors, it is available direct from Claremont, the world's largest manufacturer of flock. Write for samples, color cards, prices and information helpful to your use of this unexcelled industrial finish.

655 VACO SCREW DRIVER GIFT SET
Courtesy of VACO PRODUCTS COMPANY, Chicago, Ill.

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

"World's Largest Manufacturer of Flock and Plastics Fillers"

Work to be painted is pressed against the spray mask which is semi-permanently installed in the spray opening at the upper left of the machine. The operator then presses a foot valve that activates the spray cycle. If production does not warrant the use of two operators, one operator can operate both colors progressively, thereby assuring a steady flow of material throughout the day for other operations that may be necessary to the parts.

Within the machine, pneumatic power causes two automatic spray guns to travel parallel to the surface being painted, to apply an even coating.

Adjustable to any desired spray density, these guns can be set to any angle from 0° through 30° in any direction and can be regulated to automatically alter the angle of application during transit to assure an even distribution of paint to flat and recessed or raised portions of the surface, and to sides and corners of depressions and around mask bridges.

Both the length of the stroke and the speed of operation can be accurately controlled to provide a uniform coating in both directions or for heavy coverage in one direction and lighter spray on the return stroke.

Advantages claimed for this machine over manual spray painting include uniformity in quality and speed of production (from 100% to 300% more than hand spraying), elimination of spray booths, and clamping and holding devices, time saved by not having to pick up and lay down spray guns, higher speed of operation, less floor space required and the fact that much smaller spray masks can be used since it is not necessary to block off areas other than that surrounding the portion that receives paint.

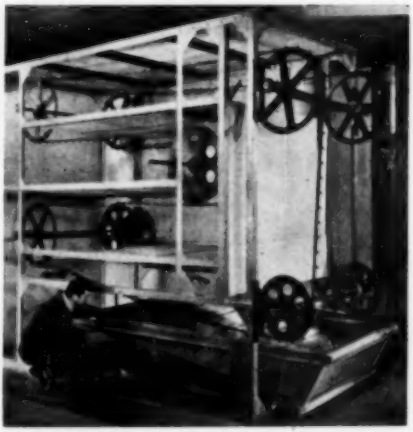
For complete information write the manufacturer, Sepanski and Associates, 410 Henry Ave., S.E., Grand Rapids 6, Michigan.

Automatic Dipping and Drying Machine

Applied Engineering Associates, 139 E. 57th St., New York 22, N.Y., has developed, designed and fabricated versatile types of automatic dipping and drying machines, one of which is illustrated herewith. This special equipment coats articles with any paint, lacquer or varnish and produces tear-free, drain-free and drip-free surfaces of uniform thickness. This is accomplished by means of automatically controlled extraction angles and rates from the dip tank. The coating is dried in a forced-draft controlled atmosphere. These factors are adjustable for viscosity of coating, size of piece, and production requirements.

Positioning of the piece with respect to carrying rack is pre-determined to eliminate any accumulation of lacquer in reverse curve horizontal sections. One operator is required for processing up to 450 rackfuls of work per hour.

The work carrying device is a length of square steel stock milled on opposite sides to accept "spring clips",



Many small parts are held by clips attached to cross bars which span the parallel chains.

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The first fully authoritative book covers modern Wrinkle finishes from all angles . . . It tells in layman's language, but technically correct, what the formulator must do to produce a soft, suede-like finish, or a high metallic gloss.

The "Science of Wrinkle Finishing" is well illustrated, in color and black and white. Both actual size and magnified photographs are included to show the many variations of textures possible to attain with these one-coat finishes. Preparation of the surface (little or none is needed with "Wrinkle" finish, making it the most economical industrial finish), spraying, drying and baking are all described in full. The application to flexible materials such as paper, fabrics and wood are also dealt with and described clearly.

Technical data on polymerization and on drying oils, not heretofore available, are given special attention.

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How it was started
How to control characteristics
What is "crystal" finish
What is crystallizing lacquer

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How to make patterns
How to blend for formulations
Where are various finishes used
What oils are used for different formulations

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How to apply "Wrinkle"
What temperature to use
What equipment necessary
How long to bake
What are the controlling factors
What is the most effective means of application
What is the viscosity of oils for applications
How to attain the finish desired

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APPENDIX B:
Summary of "Wrinkle" patents
GLOSSARY OF TERMS

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the means of attaching individual pieces to the rack. These clips are readily removable for work change. Racks are loaded onto the conveyor of the dipping and drying machine, fastening to special chain conveyor attachments. These attachments are adjustable so that the angle of extraction from the lacquer bath can be varied. Special adjustable take-ups provide means for accurately controlling the depth of immerson of the work into the dip tank, and also the angle and rate of extraction.

Variable chain speeds to meet specific production requirements are produced by external explosion-proof variable-speed drive. As the chain progresses the articles pass through the dipping tank and then into the drying labyrinth and back out to the loading position. The same operator that does the loading of the racks on to the conveyor removes the racks of finished work from the conveyor.

New Deluxe Counter Model Paint Rejuvenator

The Miracle Paint Rejuvenator Co., 500 N. Robert St., St. Paul 1, Minn., has brought out a new 2-tone baked enamel finish, counter model Paint Rejuvenator. No fastening devices are necessary. No oil is required, as

Operates smoothly, effectively, economically.

A Quick, Smooth, Uniform coating—assured by
BARRETT GALVANIZING AND HOT TINNING CENTRIFUGALS

BARRETT CENTRIFUGAL GALVANIZER is driven with high torque head and has an equalized disc brake for quick stop.

With the Barrett Whizo Galvanizer, excess metal is quickly removed from small parts after dipping in molten metal, in fact, much faster and more uniform production is assured. Parts will also pass the most rigid inspection for quality.

The method of handling is simple and easy. Work to be coated is placed in a round basket and submerged in molten metal. When thoroughly heated, the basket is placed in the Barrett Centrifugal to be immediately accelerated to high speed, the excess metal being thrown off before it can cool.

A quick pick up and stop (from 2 to 3 seconds each) assures maximum production with an even thickness of coating.

Machines furnished with or without heated surrounding drum, in capacities from 40 to 240 loads per hour, handling from 5 to 100 lb. loads. When used for tinning threaded work, rethreading has been found to be unnecessary.

Barrett Centrifugals are used extensively, combine speed with convenience of operation and the utmost in safety. They are highly developed to meet all reasonable requirements, have self-contained motor drive and occupy a minimum of floor space.

Send at once for full details of Barrett Centrifugal Galvanizer

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS.

all moving parts are encased in grease-sealed ball-bearings. The motor is completely enclosed but it is easily accessible. The presto-type aluminum holder permits cans to be changed in four seconds, regardless of size.

The Deluxe Counter Model is driven by a ¼-hp., 110-volt, 60-cycle, A.C., rubber-mounted motor. Capacity from ¼-pint to 1-gallon can. The 1 to 30 minute Timostat Switch is standard equipment.

Rustygon, Metal Primer, Prevents Rust

A new chemical development in industry's fight against rust is announced by Gensco Chemical Division, General Steel Warehouse Co., Inc., 1830 N. Kostner Ave., Chicago 39, Ill.

Rustygon, a prime coat for metal surfaces, is a chemical that dissolves and prevents rust. No oil is used in its manufacture; its coefficient of expansion and contraction, being similar to metal, permits it to move with the metal and avoids any cracking or blistering.

Rustygon can be applied with a rag, brush, spray or by merely dipping an object. The chemical action goes to work to dissolve the rust and coat the surface with a plastic-phosphate finish that is an ideal surface for painting.

Since Rustygon penetrates all of the minute pits and surface irregularities, it seals off all of the rust and prevents future rust growth which frequently breaks out under surfaces painted with ordinary metal primers. It dries quickly and is generally ready for the final paint coat within an hour. It may be applied to wet as well as dry surfaces with equal effectiveness. Rustygon is non-toxic and non-inflammable.

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New Anti-Rust Paint

PCA-100, a new penetrating and sealing anti-rust paint, which can be applied right over rusted surfaces, is announced by the Paint Corporation of America, Fidelity Building, Cleveland 14, Ohio.

Suitable for both interior and exterior use, the new paint is reputed to be equally effective in preventing rust on new metal or stopping rust action on present rusted metal. The manufacturer advises that PCA-100 can be applied right over rust without extensive surface preparation such as wire brushing, scraping or sand blasting. Upon application, it penetrates through the rust layer into the base metal and seals the surface against further rusting. The paint is suitable for either brush or spray application.

PCA-100 is furnished in black only and, due to its penetrating characteristics, should be used solely as a "finish" coat. A companion product, PCA-101 is a clear paint, equally effective for rust prevention, and can be painted over with any standard paint of any color.

Wet Tumble Finishing

Large quantities of parts are precision finished at one time in the new Model DW-60-36-2 Automatic Control precision tumbling machine recently developed by the Roto-Finish Co., Kalamazoo, Mich. This machine incorporates many new features that make its operation more automatic and enable the operator to work in greater safety.

Each of the machine's two compartments has a capacity of 18-cu.ft. It is rigidly built of 3/16-in. steel. Side supports, motor mount and floor

are all integral parts of the frame. Because of this rigid construction the machine does not have to be bolted to the floor of the building. It has been designed for use with the hoist pan system of loading and unloading.

As originators of wet precision tumbling processes, the Roto-Finish Co. gained an enviable reputation during World War II in pioneering the mechanical finishing of many diversified types of metal parts for Army, Navy, Air Force equipment.

Iridescol Pearl Essence

Iridescol Pearl Essence possesses many of the properties of the natural fish silver pearl essence but is much more stable toward heat and harsh reagents. Consisting of natural crystals obtained from marine sources, the optical effects compare favorably to those of natural fish silver. It is available in lacquer paste, volatile or aqueous solvents. A product of The Iridescent Pigment Corp. of America, P. O. Box 1605, Wilmington, Dela.

New Chromate Coating Process For Zinc and Cadmium

Enthone, Inc., Dept. IF, 442 Elm St., New Haven, Conn., announces development of a new, simplified process for producing chromate coatings on zinc and cadmium. The process is applicable for both zinc plate and zinc-base die castings. In the process from one to 2-oz. of salts are used per gallon of water. The mixture is operated at room temperature; after immersion for a few seconds, an adherent, chromate coating is produced. No elaborate means of control is necessary.

The coatings produced meet all existing specifications referring to chromate coatings on zinc and cadmium. Salt spray resistances on zinc plate

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are over 200 hours and on cadmium plate are over 500 hours.

Various colors can be applied to the "Enthox" coatings by means of suitable dyes. The coatings can be dyed jet black, red and several other shades of color. "Enthox" coatings are excellent bases for organic finishes including paints, enamels and lacquers. "Enthox" is sold as a powder mixture.

Carton-Sealing Tape

A carton-sealing tape that meets government specifications for both V3 and W cartons was made nationally available in April by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

Meets strict Government specifications.

The tape—"Scotch" brand acetate fibre tape No. 711—is government-approved for specification No. JAN-P-127, Type 3 & 4, Grade B & C, for sealing V3 cartons; and for specification No. ANT-12A-T2, GA & B for sealing W cartons.

It is used for sealing a carton's interliner and outer seams, and for covering and protecting carton labels. It is transparent, 6-mils thick.

The tape is resistant to water, shocks and rough handling and holds tight in all weather—humid, dry, hot or freezing. It has "exceptional" adhesion to paper.

When used over labels, the tape "surpasses government requirements for keeping labels clear and readable in spite of scuffing and smudging". The tape is made in ¼ to 6-in. width on 72-yard rolls. Wider widths are available on special order.

Colored Steel for Bronze

The growing shortage of bronze is compelling more manufacturers to revert to a World War II practice of substituting bronze-colored steel, according to Saul Cantor, vice-president of the United Lacquer Mfg. Corp. of Linden, N. J. and Everett, Mass.

"Manufacturers finding it increasingly difficult to obtain bronze for hardware, lamps and fixtures of all types are using steel instead, finished in a bronze-colored lacquer," he said.

The bronze or brass colored lacquer is applied in one coat, by spray or dip, and air dries ready to be handled in 15 minutes. In an oven heat of 300°F. it dries in ten minutes.

Anodizing Aluminum

Anodizing of aluminum and its alloys has generally been accomplished with the use of motor generators (or rectifiers), lead or rubber-lined tanks, refrigeration and other specific requirements.

A simple approved system applicable for anodizing under government specifications, as well as for civilian decorative and protective finishes, is now available to manufacturers and job shops. Equipment differs from the conventional type.

No license fees or royalties are involved. Chemicals may be purchased in open market.

A full scale production anodizing plant is available for customer's study of equipment needs, procedures, the "know how" and "know why" of ano-

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dizing. This plant has been in continuous production for a number of years.

The system provides anodizing of high quality, high speed and low operating costs, with little or no maintenance required in electrical equipment. Inquiries to the Colonial Alloys Co., Philadelphia 29, Pa., will receive prompt attention.

Rust Preventative Coating

"Powerfilm," a rust and corrosion preventive coating has been introduced to the industrial market by The Thomas Company, Chemical Coatings Division, 1645 Hennepin Ave., Minneapolis 3, Minn. For all metal surfaces, Powerfilm actually gets under and displaces any moisture present.

When brushed, sprayed, or wiped on metal surfaces, Powerfilm dries to form a tough, non-oily protective film that will not crack or chip, nor will dust or dirt stick to it. Owing to its thixotropic properties, Powerfilm thins down when stirred or brushed but thickens on standing, therefore applies easily without running or sagging. It has been ruled non-toxic by the U. S. Army Surgeon General.

Harmless to painted surfaces, Powerfilm is easily removed with naphtha if so desired.

New Aluminum Paints

A new line of top quality aluminum paints is announced under the brand name of "Perma-Krome". Produced in accordance with the Aluminum Co. of America's rigid specifications and bearing the Alcoa trademark on the label, this line includes three types. All three types are made with "polished pigments" for that plated effect. For additional information write to The T. H. Greenwood Co., North Hills, Penna.

Spray Mask Finishing

Production methods and techniques for spray mask painting decorative designs, toys, emblems, escutcheons, nameplates, control knobs, indicator plates, etc., on plastics, die castings and metal stampings is the subject of a 6-page, seven color folder now available, free of charge.

Information covers the five basic masks, with complete description of how, when and where they apply. This information is especially helpful in the early stages of designing to keep finishing costs to a minimum.

Nickel-formed masks offer great efficiency, economy and long mask life with fine design detail.

Complete tooling of masks, jigs and automatic equipment is available through the manufacturer, as well as a free consulting service for proper part design in relation to production spray mask finishing. Write Thierica Studio, 410 Henry Ave., S.E., Grand Rapids, Mich.

A Pre-Finish Metal Cleaner

A special acid phosphate cleaner developed expressly for the preparation of metal surfaces for painting, lacquering or japanning, has been added to the Houghton line of metal cleaners by E. F. Houghton & Co., 305 W. Lehigh Ave., Philadelphia 33, Pennsylvania.

This cleaner, named Houghto-Clean 313-A, conditions metal for final finishing by removing oils and compounds, rust preventives, perspiration and soldering residues, and then deposits a smooth, dry coating of phosphate on the metal surface to provide greater adhesion of the finishing material. This action is fast, thorough and reliable, allowing for very fast production, a saving in paint and a more durable finish.

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We take a great deal of pride in the fact that the men in our plant are "Capable". They have a capacity for solving the problems that our customers face in developing just the right industrial finish for their products. The men at Mansfield Paint know how to work with manufacturers to meet exacting specifications.

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FINISHES FOR INDUSTRIAL PRODUCTS

Pearlescent Pigments and . . .

Shuman Chemical Products, Inc., 20 Factory St., Cedar Grove, N. J., announces that "Chem-Scale" and "Nu-Scale" are included among its pearlescent pigments—used in coating materials and plastics to produce pearl-like finishes.

Other of the firm's coating materials are some with a cellulose acetate base for use on paper, textiles and other fabrics; also a cellulose acetate base coating for wire, to give a strong translucent or clear plastic covering or closure, which is lighter than glass and will not crack or break.

Fog Gun for Fighting Small Factory Fires

A unique fog "gun" developed by Bete Fog Nozzle, Inc., 85 Pierce St., Greenfield, Mass., makes it possible for factories to convert ordinary garden hose into a mobile and effective inside fire fighting weapon—a smaller edition of the fog equipment used by practically all fire departments.

With the new gun-type nozzle, a tap pressure of only 30 to 120-lbs. will produce an effective fog that will instantly blanket and extinguish small fires. What's more, such fog is effective against practically any kind of fire—oil, textile, electrical, wood, etc. This Bete nozzle has an instant trigger action and positive shut-off.

"Derusto" Prevents Rust

The Master Bronze Powder Co., 5009 Calumet Ave., Hammond, Ind., maker of Broma Aluminum Paints, announces "Derusto" which prevents rust, absorbs rust and stops rust on either new or rusted surfaces.

According to the company's statement "Derusto" has proved its rust-arresting qualities in test after test—made by the manufacturer and rechecked by Pittsburgh Testing Laboratories. "Derusto" has proved itself against acid fumes and alkali solutions. It has passed the government hot and cold water test and salt spray and salt water immersion tests.

"Derusto" is available in standard industrial colors. It is self leveling and can be applied by brushing, spraying or dipping.

Cleaning-Phosphatizing Metal Surfaces for Painting

The DuBois Company, 1120 W. Front St., Cincinnati 3, Ohio, announces Ion-Kote, a new cleaning and phosphatizing compound to prepare steel and other metals for painting. The material comes as a white, granular, easy-to-handle, dustless powder; it is placed in solution and used in spray washers to clean and treat metal surfaces before painting. It deposits a hard, dust-free, phosphate coating on metal which prevents rusting and increases paint adherence.

Ion-Koted metal parts are able to withstand more than 500 hours of salt spray testing. This treatment retards rusting of metal parts over the week-end before painting. Ion-Kote can be used in 2 or 3-stage washers; you use only one material for cleaning and conditioning.

Intrusion Alarm

To provide positive intrusion and burglary protection for industrial properties, Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass., offers Photoelectric Intrusion Alarm Set P1A. This equipment provides a protecting wall of invisible light across any space up to 50-ft. No intruder can enter this space without setting off Photoswitch Intrusion Alarm. This is the modern form of

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Sundstrand *Straight-Line Action* Air Sander saves time...gives more uniform finish!

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Klean Strip Remover; Preservatives

W. M. Barr & Co., P. O. Box 3518, Memphis 6, Tenn., manufacturer of non-inflammable, "no-after-wash" paint removers, announces the production of a complete line of removers, preservatives and cleaners under the Klean Strip label.

The new line includes Heavy Bodied Klean Strip and Strip-X paint and varnish removers, Metal Treat Concentrate and Coppo Preservatives.

Metal Treat Concentrate is a 3-way metal treatment. Diluted, it assures paint adhesion and prevents rusting of unpainted metals.

Coppo, copper-naphthenate preservative, is based on a Government Specification Formula for inhibiting and preventing rot, mildew and termites. Developed originally to preserve wood, it can also be used to prevent deterioration of awnings, canvass or other fibrous materials.

Roy Smith, Sales Manager for James B. Day & Co.

Roy T. Smith, associated with James B. Day & Co., Chicago, for 22 years, has been appointed Sales Manager. It was announced recently by Arthur T. Day, President. Mr. Smith will direct the company's industrial and trade sales of protective and decorative coatings.

Metallic Coating for Reverse Side of Clear Plastics

Development of a new coating for polystyrene plastics said to give a finish almost as brilliant as plating or metallizing, is announced by M. A. Self, President of Bee Chemical Co., 13799 South Avenue "O", Chicago 33, Illinois.

The new coating, Logoquant R 2513, is used as a carrier either for bronze or aluminum powders and is specifically designed for application *on the reverse side of plastics.* It has good adhesion, abrasion resistance, color fastness and resistance to cold and heat.

In addition to the new metallic base Logoquant R 2513, Bee Chemical also announces a new service in the industry—that of supplying bronze or aluminum mixed Logoquant tailored to individual customer specifications, in addition to offering other metallic color in Logoquant coatings.

Neilson Representatives in Canada

The Neilson Chemical Co. of Canada, manufacturers of Prep Products for cleaning, rust-removing and general conditioning of metal surfaces before painting, has recently placed Mr. S. Brown, 2605 Curratteau St., Montreal, Quebec and Mr. Jack Gray in Freeman, Ontario, for the purpose of giving more effective technical service coverage in the Montreal industrial area, and the Toronto industrial area respectively.

Award of The Galvanizers

"For distinguished service in the field of galvanizing", Nelson E. Cook, General Superintendent of Galvanizing for Wheeling Steel Corp., recently received the 1950 Annual Award of The Galvanizers' Committee, sponsored by the American Zinc Institute. Mr. Cook received the bronze plaque and citation during a 2-day meeting of both groups at the Statler Hotel in St. Louis, attended by more than 250 leaders of the galvanizing and steel industries. Mr. L. C. Flickinger, Chairman of The Galvanizers' Committee made the presentation.

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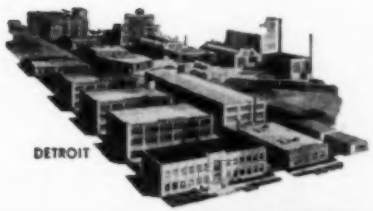

DETROIT

ANAHEIM, CALIFORNIA

Illustrated *(left)* are Rinshed-Mason's 37 building units at Detroit and Anaheim, California, consisting of office, factory and laboratory facilities. Not shown are field exposure test facilities in Florida.

Established in 1919, Rinshed-Mason is one of America's leading manufacturers of fine quality lacquers, enamels and undercoats for automobiles, farm equipment, appliances, and numerous other peacetime industrial products. Beyond this, versatile laboratory and production facilities are available to meet defense requirements for protective and other coatings.

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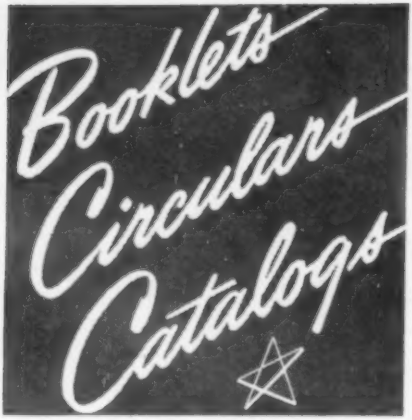

Bulletins Explain Binks Free Help to Spray Users

A new 6-page bulletin 8½x11-in., and a 3-page letter from Binks Mfg. Co. (complete spray equipment), 3140 Carroll Ave., Chicago 12, Ill., contain practical information for manufacturers who are looking for fast, economical ways to apply finishes and coatings to defense or civilian products. A procedure, consisting of five distinct steps, that will help firms convert to or start defense work with the least possible delay, is explained in detail.

D.O. Bulletin 10 decribes the program that Binks has inaugurated to support this 5-step procedure. The counsel described in the bulletin is offered to manufacturers without charge. It may help avoid the costly error of "going it alone" in solving D.O. spray finishing problems.

The inside spread of Bulletin 10 shows pictures of Binks installations for spray painting military equipment.

Special Binks machine automatically coats inside and outside of shells; skips when an empty spindle passes the spraying zone.

Recording Viscometers

An 8-page illustrated bulletin (V-1000C) released by Norcross Corp., 247 Newtonville Ave., Newton 58, Mass., describes recording viscometers for manual or automatic control of viscosity as an industrial process control.

Bleaching Color From Wood

Copies of a 2-page typewritten article entitled, "Problems of Bleaching Now Eliminated", has been prepared for free distribution to customers and prospective customers of Spe-de-way Products Co., 3639 N. Columbia Blvd., Portland, Oregon.

New Ventilator Catalog

A new, condensed catalog covering the complete line of Burt Ventilators and Louvers is now available, on request, from The Burt Mfg. Co., Dept. IF, 927 S. High St., Akron 11, Ohio. The new book supplies design and construction features for each ventilator type.

New Demineralizer Catalog

The Industrial Filter & Pump Mfg. Co., 5900 Ogden Ave., Chicago 50, Ill., has issued a new 4-page catalog giving detailed information with principal specifications and performance data on its standard demineralizer units for low-cost, chemically pure water.

Facts About Lacquer Free

The reasons for the ready availability of lacquer today, and for the foreseeable future, are given in a new leaflet "Some Facts You Should Know About Lacquer," published by Hercules Powder Co., Wilmington, Dela.

The leaflet points out that of all the production-line finishes in use today, nitrocellulose lacquer is the least vulnerable to shortages. Basically the reasons for its availability are: Ample production capacity for both nitrocellulose and lacquers to take care of military and essential civilian demands; lacquer formulations are so flexible that lacquer is not tied to any one critical material, or to any group of materials.

The use of the hot-spray process is also recommended, wherever possible, in order

Stop Blushing

We may as well try to reverse the flow of Niagara Falls as to attempt to stop the bride from blushing. But — we can stop blushing *in your finishing room!*

While blushing may be attractive on the bride, it is a most costly item in your summer finishing operations. Particularly is this true in the furniture industry.

With BEDE PAINT HEATERS you can completely control the blushing of lacquers without the use of expensive retarders. At the elevated temperatures produced by BEDE PAINT HEATERS, it is virtually impossible to create a blushing condition . . . And that isn't all a Bede Paint Heater can do . . . There are many additional advantages to be derived from its use.

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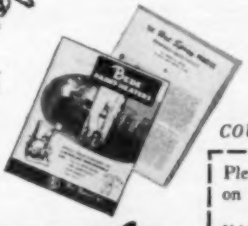

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to conserve solvents as well as save production manhours.

Modern lacquer formulations, hot or cold, will be considered for military applications even where synthetic enamels are now specified because of the better availability of lacquers and the possible advantages obtainable by hot-spray, according to the leaflet, which also lists a number of military uses for which lacquer is now specified.

Safety Storage Bins

Industrial Products Co., 2974 N. Fourth St., Philadelphia 33, Penna., announces a new line of Safety Storage Bins designed for plant areas where excelsior, paper, rags, paint and other combustibles are used. Each bin is made of heavy gauge galvanized iron with reinforced angle iron corners. It is fitted with a fusible link so that the cover closes automatically in case of fire.

Gas-Fired Radiant-Heat Ovens for Industry

A new four-page, 2-color folder shows several installation views of Burdett gas-fired radiant-heat ovens which are designed both for burn-off service and for baking protective and decorative coatings applied to metal surfaces. Detailed information about the burners and oven performance are given. For a free copy, write Burdett Mfg. Co., 3433 W. Madison St., Chicago 24, Ill.

Cleaning and Conditioning of Metal and Klem-Kote

Klem Chemicals, Inc., 14401 Lanson, Dearborn, Mich., has available a new 4-page folder on its product Klem Kote—a cleaning and phosphating material which is being widely used in the automotive and allied industries. Klem Kote is unique in its ability to provide in a 3-stage washing process salt-spray resistance which would normally require perhaps five or six processing stages.

Makes Paint Stick to Galvanized Iron

A new 4-page bulletin published by American Chemical Paint Co., Ambler, Penna., explains the product "Lithoform" and its uses in preventing paint coatings from peeling from galvanized iron and zinc.

"Lithoform" is a non-inflamable, liquid, zinc phosphate coating chemical that can be applied by brushing, immersion, or spraying. Zinc and cadmium surfaces including galvanized iron, galvanneal, cadmium plated steel, zinc-base alloys, and zinc-base die castings can be effectively phosphate coated with "Lithoform" prior to painting.

Free Informative Folder on Black Oxide Process

Printed in three colors, new 8½x11-in., 4-page illustrated bulletin reveals interesting and practical information about the new one-bath blackening solution for producing an attractive rust-resistant black finish on steel and iron products. It is the Black Magic (Type A) black oxide process developed by Mitchell-Bradford Chemical Co., 2446 Main St., Stratford, Conn., and 7001 N. Clark St., Chicago, Ill. Six "Big Advantages" of the improved process are listed and explained in the bulletin.

Revised Pamphlet on Flexible Burring by the Lea Method

The outstanding characteristic of the Lea Method of Burring is its flexibility. Operations are carried on by the use of suitable cloth of felt wheels or bobs, coated with a suitable grade of Lea Compound. By use of these wheels and bobs, the operator has control over the removal of sharp edges, jagged surfaces, fins, slight surface imperfections, etc.

This booklet on Lea Burring Methods gives standard practice for both ferrous and non-ferrous metals and instructions as to which wheel and compound to use. Copies of the booklet can be obtained by writing The Lea Mfg. Co., 16 Cherry Ave., Waterbury 20, Conn.

Atomic Defense Booklet

"How To Prepare Your Plant For Atomic Attack", is the title of a 32-page illustrated booklet on industrial plant security being offered to all plants, large and small, by Walter Kidde & Co., Inc., Dept. A, 675 Main St., Belleville 9, N. J. The booklet is believed to be the first on this vital subject intended specifically for industrial management and safety personnel, prepared and distributed solely at the expense of a private company.

In simple language the booklet presents the latest factual information about the atomic bomb, its destructive potential, and its limitations; a guide to plant management in organizing personnel to cope with possible plant disasters; and recommendations for strengthening plant construction and sustaining production in the face of bomb attack.

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Industrial FINISHING Editorial

Surface Preparation Before Coating

Just as much needed as the paint, varnish or lacquer for a finish, is preparation of the surface before any coatings are applied. This goes for metal, wood, plastic or any other type of material. First of all, the surface to be coated must be made clean—chemically clean — by methods and equipment that have proved to be safe, effective and economical.

If a smooth finish is desired, the surface must be made smooth by cutting down the high places and filling in the low places. Materials, tools and methods for doing this work are well known, but finishers must be continually reminded of their importance. This preliminary work must not be slighted in any way; it should always be of top quality.

The real finish—the protective and decorative film of paint, varnish or lacquer—is very thin and it must adhere so well that it appears to be a part of the metal or wood surface. It will not adhere tenaciously unless that surface has been properly prepared before hand. Correct surface preparation is really the foundation of every satisfactory finishing job; lack of it is the cause of many finish failures.

A surface preparation setup in any factory needs frequent attention and intelligent supervision. It may be started out correctly (when supervisory attention is focused on it) but will it be kept functioning at top efficiency? It will not unless it receives periodic attention from a competent individual who is interested and responsible for making it continue to work effectively and economically.

REPRINTS AVAILABLE!

Paul Blackmore's 12-page article entitled

"HOW MUCH IS A GALLON OF PAINT WORTH"

as published in the August, 1950, issue of this magazine.

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Cleaning Up Finished TV Cabinets, etc.

★ Many of the radio and television assembly plants have a cleaning problem on the cabinets before and during final assembly. Of course the amount of cleaning varies with the source of supply.

Some of the larger plants have set up the following procedure or some variation of it as standard, and the results are gratifying.

First, the cabinet is unpacked and inspected for structural or finish dam-

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Purchasing agents who have no time for guesswork and speculation as to which industrial finish is best for their purposes, consistently choose Industrial Finishes by STANDARD.

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age. The majority of cabinets, being satisfactory, are placed on the assembly line for chassis, speakers, etc., to be installed so they can be readied for final inspection.

Possibly the first operation is inspection of the grill silk, making sure that it is clean and tight. If it is loose it is sprayed with a solution of water and alcohol to shrink it.

Next comes a thorough brushing of all the cracks and crevices where perhaps some lacquer cuttings and pumice stone are showing white. A mixture of stain is used on a rubbing brush to remove this objectionable whiteness or to darken the cuttings that cannot be brushed out.

Following this, a good washing with naphtha or a solution containing a chemical detergent is given the entire cabinet to remove any oil that has been left by rubbing. This rubbing oil nearly always causes a hazy finish and must be removed before a clear sharp finish color is apparent. The cabinet is allowed to dry, after which it is reinspected and patched. Some procedures call for an application of wax before packing.

Procedures, such as those just described, are used by various assembly plants; they are good, the cost is low and the results are sure.

Variations can be worked out by any furniture factory or furniture store to give furniture that clean, fresh look that means eye appeal.—*Herman Hardesty.*

J. O. Ross Engineering and Ross Industries Corp. Merged

Ross Industries Corporation, Highland Park, N. J., announces that it has been merged with its wholly owned subsidiary, J. O. Ross Engineering Corporation. Both businesses will henceforth operate under the name of J. O. Ross Engineering Corporation, with main offices at 444 Madison Ave., New York 22, N. Y. There will be no changes in personnel, plants or operation of either organization involved in the transactoin.

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Personnel Resistance to "Tests and Controls"

★ All manufacturers who are progressive realize the necessity of close control in all phases of the processing of their products.

Many, however, do not appreciate the natural aversion of production men to tests and controls which they feel handicap them in attaining their production goals.

There is only one weapon which we have found to overcome this "control resistance". Periodic meetings of all production departments are held to acquaint them with the significance of each test and to show them how the product falls down if it is not held to the required specifications.

In a paint plant, for example, the batch mixer, the mill man and the tinter are all important cogs in the processing of various formulations and they should be frequently consulted to attain smoother and more uniform production.

Similar conditions prevail in the factories that use finishing materials on their products. There must be tests and controls to get and to maintain uniformly good quality finishing. —*Louis E. Martin.*

Black Ebony Finishes

★ Overnight a trend of black "ebonized" finishes has hit the market. Many finishers in small shops and factories are at a loss as to how to get the results the customer wants—or so they say.

Here is one procedure that will work for nearly any black finish on wood:

Before starting to finish, make certain that the wood is free of any dents, scratches, open joints and all

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other mars, because a black finish will magnify every defect.

1) Stain the wood with black NGR stain. This is done so the wood won't show white if the finish is damaged.

2) Fill the pores with a dark paste filler if the wood is of the open grain variety such as oak, walnut or mahogany. Woods of the tight-grain types such as poplar, gum and maple, do not require filling. After filling let dry the recommended time.

3) Spray a full coat of black primer surfacer; let dry and sand perfectly smooth. If pits or open grains are apparent, apply a second coat of primer surfacer and resand, using No. 320 sandpaper.

4) Spray on a full coat of flat black lacquer; let dry at least two hours.

5) Spray two full coats of 24% to 27% solids clear lacquer, allowing two hours of drying time after each coat. Be sure the lacquer is of the right sheen to give the desired result. If a high gloss is needed, use a high gloss clear lacquer; if a satin finish is called for, use a semi-gloss clear lacquer.

6) After drying 12 hours sand the surface with No. 360 sandpaper until it is perfectly smooth and free of any defects.

7) Rub with No. 4/0 steel wool to remove all sanding marks.

8) Compound with a fine rubbing compound or rotten stone to the desired sheen.—*Herman Hardesty.*

United Lacquer Expands Its Production Facilities

The United Lacquer Mfg. Corp., Linden, N. J., has put up a new explosion-proof factory building which will provide 4000-sq.ft. of additional space for manufacturing operations. The building is platform height and finished in stucco. In addition to the firm's headquarters plant in Linden, N. J., the company also maintains New England manufacturing facilities in Everett, Mass.

Air Trapping and Its Causes

★ Now that summer is here we can expect the old "bug", air trapping, to show up in our lacquer and sealer coats—unless we take special precautions against it.

Air trapping in any major degree can be very costly, especially on highly polished finishes, because there isn't really much chance of repairing it after the piece has been rubbed. In some cases the finish must be stripped and the piece refinished; in others it can be flowed out with lacquer retarder. In any case it is a nuisance.

Most material suppliers have summer and winter formulas for lacquers and sealers; the basis of these differences is changes in solvent blends to richer or slower types for summer use. This in itself will usually tend to eliminate air trapping, but there are many other things to be considered—and film thickness is probably the most important.

In these days of high production, some manufacturers attempt to overcome poor filling jobs, poor sealer sanding, etc., by putting on heavy coats of lacquer, especially on tops that require a fine rubbing job. This I have found to be one of the major causes of air trapping, even on highly retarded coatings.

I believe that more importance should be attached to sealer sanding, thereby eliminating the necessity of using such heavy coats of lacquer to produce a good rubbing surface. Also, double filling will help this situation.

Another cause of air trapping is improper fluid and air pressure at the spray gun. This is very important and should be carefully watched by the foreman. All fluid and air controls should be kept in good working order at all times. Too much air pressure on the head on hot days will

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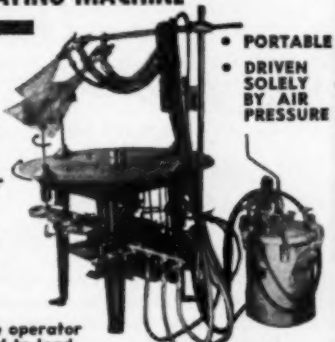
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tend to cause case-hardening of lacquer coats which, in turn, causes trapped air. Too much fluid pressure will cause improper breakup, and too heavy film will cause air trap.

I find that the ideal pressure setups for the average lacquer are about 25-lbs. on fluid and 55 to 60-lbs. on head. This, of course, will vary with needle and tip combinations, and lacquer viscosities, but I don't think it is necessary to use over 60-lbs. of air for breaking up lacquer; if possible, I prefer less.

Air drafts from open windows, elevator shafts, etc., can help to speed up air trapping, especially on hot days when the wet lacquer is exposed to these drafts, even for a short period of time.

Now to sum up my observations on this problem of air trapping: If the finisher will keep the above things in mind he will probably save himself a "headache" and his company money. Here again are the things to watch:

1) See that your lacquer supplier furnishes you with a summer formula material for summer use. Even then you may need to add retarder at certain times.

2) Watch your spray man that he does not lay on too heavy coats.

3) This is very important; watch air and fluid pressures closely and keep them right.

4) Look for drafts hitting wet lacquer coats from open windows, etc.— *Harold Dean.*

May Solve Benzene Shortage

A bottleneck in the chemical industry caused by benzene shortages could be broken by next year if a new plant is built to make vinyltoluene (m- and p-Methylstyrene) is announced by R. H. Boundy, general manager of The Dow Chemical Co.'s plastics division.

Vinyltoluene is made from toluene and ethylene instead of benezene and ethylene. In all trials to date it appears that vinyltoluene will prove a satisfactory substitute for styrene in the manufacture of some synthetic rubbers, plastics and coatings.

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Campbell Represents Cowles in St. Louis and So. Illinois

In order to cover more completely the expanding market in the metal cleaner field, Cowles Chemical Co., Cleveland, Ohio, announces that Robert H. Campbell was appointed Cowles Technical man for the Metal Cleaner Department in its new sales territory comprising southern Illinois and St. Louis, Missouri.

Mr. Campbell is well qualified for his new assignment. He attended the University of Illinois and Rockford College, specializing in chemistry. Following college he worked for a number of years at National Lock Co., first in the plating laboratory and then as assistant foreman on the plating line.

Hultgren Becomes Manager of O'Brien Industrial Sales

George A. Hultgren has been appointed manager of Industrial Sales of The O'Brien Corp., finish manufacturer at South Bend, Ind. He succeeds George W. Vesey who recently resigned.

Mr. Hultgren has been actively employed by The O'Brien Corp. since 1936, with the exception of four war years during which time he served in the United States Army.

Buyer Resistance? Send Them Clean Products

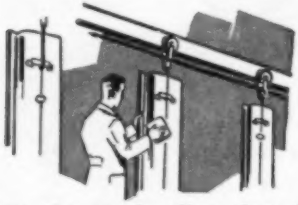
★ During this time of extreme sales resistance a furniture manufacturer finds his customers more critical than usual—and the furniture dealer finds that he is dealing in a very sensitive buyer's market. One of the simplest ways to improve the relationship and to lower the sales resistance between the buyer and seller is to *deliver clean merchandise.*

Perhaps skilled labor is not available to produce all perfect pieces; maybe materials are not up to par. These the seller cannot always control, but he can always ship clean furniture, free of oil film, free of any trace of lacquer cuttings, pumice stone, etc. The following things can be done cheaply and quickly.

1) If a rubbing oil is used in the rubbing process, wash the piece thor-

DUST-ALL Tack Rag

for better, cleaner finished jobs



Remove the specks, lint, dust from surfaces to be painted; wipe them off with a Dust-All Tack Rag; be sure of fine, blemish-free, finished jobs.

Get the Dust-All Tack Rag in the familiar Red Checkered Bag; also available in 150-250-500 yard rolls.

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oughly with naphtha or a detergent solution before polish is applied. This will help to eliminate any oil bloom.

2) If the piece includes flutings, routings, carvings, etc., and is to be rubbed, use a stiff brush on all crevices after rubbing to remove those lacquer cuttings. A mixture of stain can be used on the brush to darken the cuttings that are not brushed out.

3) If a polish is used, be sure to use one that will leave a clean dry surface—one that is oil free; one that will keep the merchandise appearance the same from the time it leaves the shipping room until it is unpacked by the customer.—*Herman Hardesty.*

Please Mr. User, Tell Us What It's For

★ The manufacturer of industrial finishes is more than willing to give service to his customers and prospective customers. He is ready to answer questions about his product and its performance. However, before he can give answers or make recommendations he must have certain information at his disposal.

He wants to know such things as the surface to which the coating will be applied, pre-treatment or cleaning of surface, method of application of coating, and baking schedule or air-dry time. Trouble is likely to develop if he does not get the full story. With the complexity of modern business it does happen that details get lost in the shuffle. However, an efficient organization will keep this tendency to a minimum.

One manufacturer wanted a durable enamel for steel. This he received. He didn't mention that he was going to coat a few brass parts also. The enamel readily peeled from the brass. Another manufacturer didn't tell his paint supplier that certain metal

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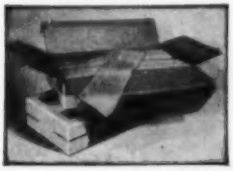

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No matter which way you buy it, you can be sure that every square inch will **stay** SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

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parts were heat treated for an hour at 400°F. after coating. The result of his omission was loss of time, as the coating had to be reformulated. A third example is of a company that changed to a faster, less efficient method of cleaning its steel. Soon adhesion troubles developed.

The manufacturer of industrial finishes cannot, of course, work out every detail of application for his customers. But he does have wide experience in solving finishing problems. It is only common sense to take advantage of this experience.—*E.V.G.*

Jenkin-Guerin Co. of St. Louis Agents for Clinton Co.

The Clinton Co., manufacturer of finishing materials, Chicago, Ill., announces the appointment of Jenkin-Guerin Co., 4480 Hunt Ave., St. Louis 10, Mo., as its agent for the distribution of industrial lacquers and enamels in that territory.

Iridescent Pigment Corp. Buys Decker Pearl Essence Patent

The Iridescent Pigment Corporation of America, P. O. Box 1605, Wilmington, Delaware, announces that it has purchased U. S. Patent 2,555,224, issued to William E. Decker. The title is "Pearl Essence and Method of Manufacture". While this patent has been acquired primarily for use by The Iridescent Pigment Corp., consideration is being given to the licensing of a few other manufacturers.

Clean, Hard, Rubbed, Waxed Surface for Furniture

A 4-page folder illustrates and describes the use of Wilkinson's neutral wax rubbing lubricant, high luster rubbing compound and dry gloss polish, all of which are included in Wilkinson's wax rubbing system for furniture and fine cabinets. Results claimed are faster cutting during rubbing, faster clean-up after rubbing, no oil bloom or haze, and a mar-resistant wax surface. For a free copy of this folder which lists the company's rubbing lubricants and waxes, write to Wilkinson Equipment & Supply Corp., 6958 S. Wentworth Ave., Chicago 21, Ill.

Pinholes in Mahogany

PHILIPPINE MAHOGANY is regarded as a difficult wood to finish. The pores of this wood are large and filled with a starchy hygroscopic matter that swells quickly and will dry out thoroughly only at 70° to 100° F. and 15% to 20% relative humidity. A low humidity is the only effective remedy for preventing pinholes. High humidity and high heat often cause pinholes in woods with large pores.

The hygroscopic matter in the grain of the wood swells in damp weather and closes the pores tightly. Water-stain, alcohol in shellac, etc., also help to swell the wood grain.

Under such conditions, although the wood appears to be smooth before or after filling (even when examined under a magnifying glass) the cause of pinholes will not be affected until the first coat of varnish has been applied and dried. The chemical dryer in varnish coagulates hygroscopic matter in the grain of wood; the pores contract and pinholes result.

When Philippine mahogany is treated with a chemical solution in the sanding department after rough sanding, then dried thoroughly overnight and polished with 6/0 sandpaper, pinholes will not develop later.

This chemical solution coagulates the matter in the pores and, when the wood is exposed to high humidity or when water stain is applied, the grain does not swell and close the pores. The surface so treated requires very little sanding after water-staining. Filler is also able to enter the pores and prevent pinholes.—*Liquafill Mfg. Co.*

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C & H Supply Co., Seattle, Wash.
Hugh Russel & Sons Ltd., Montreal & Toronto, Canada

Cleans Metal Parts

THE SMALL METAL cleaner illustrated here is in use in the armament department at Northrop Aircraft, Inc. It is used to remove all dirt from gun parts just before re-oiling and assembly. It would work just as well in any department where small, localized metal cleaning operations are necessary.

Jets of compressed air agitate the cleaner.

It consists simply of a small metal tank for holding the cleaning solvent. Perforated pipes at the bottom release jets of compressed air which agitate the cleaner violently. Parts to be cleaned are placed in a small wire mesh basket immersed in the cleaning solution, and then the air is turned on. Only a few seconds in this violently agitated cleaner is sufficient to clean the dirtiest of parts.—*G. C. Close.*

Flexible Finish for Metal

The Kay & Ess Co., Dayton, Ohio, announces a new finish that has the combined merits of alkyd and phenolic types of synthetic material.

Finishes made of this resin are outstanding for use where deep draws are made after coating; where extreme resistance to chemical reagents, both alkali and acid is needed; and where adhesion is of prime importance.

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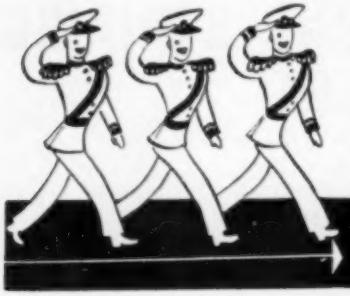

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Paul S. Kennedy Passes Away at Age of 62

Paul S. Kennedy, 62, vice-president of the finishes division of Interchemical Corp., Newark, N. J., died June 6, in Fitkin Memorial Hospital, Neptune, N. J.

Mr. Kennedy was vice president and general sales manager of Murphy Varnish Co. at the time it was acquired by Interchemical Corp.

Mr. Kennedy served as president of the New York Paint, Varnish & Lacquer Association during the 1948-49 term, and, at the time of his death he was a member of the executive committee of the New York paint club and also on the advisory board of the National Paint, Varnish & Lacquer Association. He lived in Orange, N. J.

Sealing Castings Before Painting or Finishing

ONE METHOD of sealing porous metal castings includes placing them in a vacuum-pressure machine for forcing permanent sealing material into the metal pores.

First, the castings must be clean, with only minute porosity present; that is, no large blow holes. Castings are placed in a vacuum tank, the vacuum pump is turned on, and a vacuum is drawn for 20 minutes. This vacuum operation removes all air and moisture from the inner walls of the casting so the open pores can be filled with Cast Seal.

The vacuum pump is shut off; a valve is opened and Cast Seal is let into the vacuum tank, covering the castings without breaking the vacuum. Then 100-lbs. of air pressure is turned into the tank to drive the sealing material into the casting surfaces from all sides, filling all minute porosities. This operation requires 20 minutes. Surplus Cast Seal is then blown back into the supply tank. The castings are removed from the vacuum tank and rinsed in plain water. No solvent is necessary for cleaning, and the castings do not have to be baked after having been impregnated.

Castings impregnated by this process and material show no surface evidence of impregnation. Impreg-

nated castings have been tested with as high as 10,000-lbs. hydrostatic pressure, with hot oils and high steam pressures. Heat, cold, gas, oil and chemicals have no effect on the material that has been forced into a casting. Aluminum and zinc castings can be anodized, as well as dichromate dipped after impregnating. There is no possibility of Cast Seal, after impregnating the porous area of a casting, to flake, chip or break loose, as this process drives the sealer deep into the castings; it is not just a surface seal. The metallic flours used in Cast Seal will not set up electrolytic action in aluminum castings.—*M.C. of A.*

Highlighting Carvings

IN FINISHING wood furniture the highlighting of carvings, turnings and inlaid areas will be easier if a thin coat of shellac is applied to these areas in the white. Application of the shellac coating may be made by spot spraying or by hand brushing, depending upon the volume of production, and the size and contour of the areas to be coated.

This shellacing in the white should be performed after final sanding and, of course, it should be confined strictly to the areas to be highlighted later. The thin coating of shellac prevents stain and filler from entering the pores of the wood in these relatively small areas. When the piece finally arrives at the shading stain booth, this operator can easily and quickly blend the color up to the highlighted area.—*Finisher.*

Portable Electric Oven; Shelves

A new model portable electric oven with four shelves that provide for shelf processing has been added to its line by Grieve-Hendry Co., Inc., 1101 N. Paulina St., Chicago 22, Ill. The shelves have room for eight 2-in. deep by 12-in. wide by 23-in. long drying pans.

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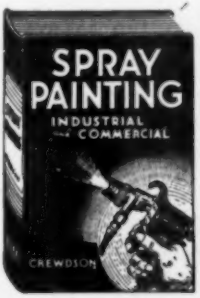

This new book covers the fundamental principles of spraying technique, together with the latest developments and practices of this craft. Covers common paint pigments, paint extenders, enamels, oil and spirit varnishes, shellac, lacquer, synthetics, all types of modern air guns, spraying technique, spraying standard materials, spraying defects, their cause and remedy, flock and suede finishes, striping and lettering, pearl lacquer finish, also automatic spraying, electrostatic spraying, agricultural spraying and automobile spraying. Ends with the sprayers "Ten Commandments."

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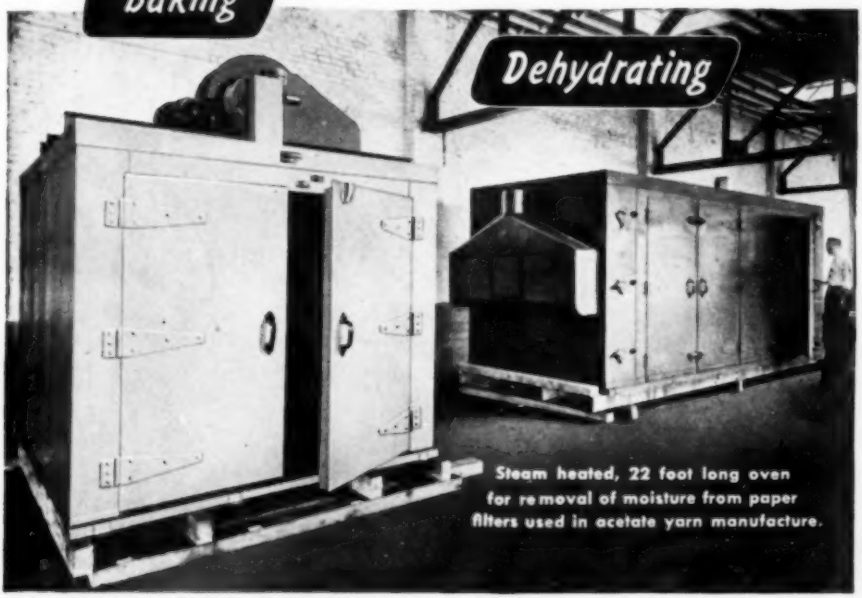

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